The Effect of the Insertion Method of Network Video Advertisements on Consumer Purchase Intention

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Abstract. The SOR theory and structural equation model are used to analyze the influence of three kinds of insertion methods of online video advertisements on consumers’ purchase intention. Research shows that video implantable advertisement have the most significant impact on consumer pleasure, and network video patch advertisement have the most significant impact on consumer arousal. Through comparative analysis of the three, it provides practical guidance for video platforms or advertisers to more accurately select the way to advertise and then maximize the effectiveness of advertising.

1. Introduction

The 43rd China Internet Development Status Report shows that [1], as of December 2018, the number of online video users reached 612.01 million, an increase of 33.09 million compared with the end of last year, accounting for 73.9% of the total netizens. In 2010, the size of China’s online video advertising market reached only 100 million yuan, and in 2018, it reached 41.658 billion yuan [2]. The huge network video users, the gradually mature network video advertisement monitoring and effect evaluation technology, the increasingly mature online video advertisement delivery mode attracts more and more advertisers to put advertisements into the network video. At present, more research is on the form of online video advertisements. There is almost no relevant literature to put together several network video advertisement insertion methods for research. In order to fill the gaps in this aspect of the research, this paper chooses three representative methods to compare and analyze, and concludes which advertisements are more easily accepted by consumers, and then provides suggestions for advertisers and video platforms.

2. Literature review

2.1 Definition and form of Internet video advertisement

Online video advertising is an advertisement insertion method for advertising and publicizing advertising information through a network video platform. Due to the different definitions of the concept of online video advertising, different scholars have different classification methods. Zhang Ying [13] divided online video advertisements into five categories: pre-roll, video patch, video float, player background and UGA video. Zhao Chaoyang’s classification method [24] compared with Zhang Ying’s, the only difference between the two categories is the front-end advertising and web-embedded video advertising. Peng Jin and Zhang Mingxue [23] compared Zhao Chaoyang’s classification of online video ads to reduce the background of player background advertising. In Hong Yao [10], only video
patch advertisements and video placement advertisements are classified as the above-mentioned scholars. By combing the literature, online video advertisements are mainly divided into six categories. This paper selects three common forms of advertising, such as network video patch advertisement, video implantable advertisement and barrage video advertisements.

2.2 Consumer purchase intention
Fishein [3] first proposed the word "willingness". The willingness refers to the probability that an individual performs a specific behavior, and purchase intention refers to the possibility or subjective probability that a consumer chooses to purchase a specific product or service. Dodds & Monroe [17] understood purchase intention as the degree to which a customer purchases a product. Mullet scholars believe that the role of consumers in the attitude and external factors of a product or brand constitutes the consumer's purchase intention. Based on the above scholars’ point of view, this paper believes that consumer purchase intention refers to the probability that consumers are willing to buy a certain product or service before actually implementing the purchase behavior.

3. Research hypothesis and model construction

3.1 Network video patch advertising and consumer emotional response
Network video patch advertising is an advertisement for video-independent content that is inserted in the beginning, end, or end of a video [5]. The advertising effect of network video patch advertisements is mainly caused by factors such as brand familiarity, frequency of advertisements and attractiveness of advertisements. Many studies at home and abroad have shown that brand familiarity can be used as a regulatory variable for researching advertising attitudes, and differences in consumer brand familiarity can affect advertising attitudes [5]. Zhu et al. [6] also showed that brand familiarity is positively affecting brand attitudes and consumer purchase intention. In the frequency of advertisements, brand awareness will increase with the frequency of advertisements [7]. The pop-up advertisement is suspended in the network video patch advertisement, and the cognition effect of the advertisement is ensured due to the frequency repeatability [8]. In the attractiveness of advertising, Wan Jun et al [4] found that the attractiveness of the appearance of online video advertising significantly and positively affects consumer pleasure. Zhu Weilin scholars [9] also found that the attractiveness of advertising has a positive correlation with the effectiveness of network video placement advertising. Therefore, this paper proposes the following assumptions:

H1a: Network video placement ads have a significant positive impact on consumer arousal
H1b: Network video placement ads have a significant positive impact on consumer pleasure

3.2 Video implantable advertisement and consumer emotional response
Video implantable advertisement refers to the placement of advertisements through special settings, intangible implants of details, and bundled marketing of spokespersons and products [11]. The advertising effects presented by video implantable advertisements are mainly made up of factors such as familiar spokesperson, plot relevance and implantation methods. Yi Cheng [12] found that familiarity with the spokesperson significantly and positively affected consumer perception. Related studies have found that viewers will turn their attention to the brand of their endorsements because of their preference for spokespersons. In terms of episode relevance, Song Sigen and Li Yongfa [15] also proved that the degree of episode correlation positively affects brand memories. And Zhou Nan and Wang Dianwen [16] believe that the correlation between brand and plot in the product placement enhances the optimal value of the brand. In terms of implantation methods, Russell [14] found that when the implantation method remains consistent with the plot perception, the audience will have a positive attitude towards the brand in the advertisement; Gupta et al. also found that the sound combined with the video planting incoming is more likely to cause consumers' memories than simple video implantation, and the implantation effect is better. Therefore, this paper proposes the following assumptions:

H2a: Video implantable advertisements have a significant positive impact on consumer arousal
H2b: Video implantable advertisements have a significant positive impact on consumer pleasure

3.3 Barrage video advertisements and consumer emotional response
Barrage video advertising refers to the advertising method of sending advertisement information through a barrage in a film or television work or video [18]. The advertising effect presented by the barrage video advertisement is mainly composed of factors such as the relevance of the story, visual effects and language expression. Gu Xiaojie and Fan Yuqin [18] believe that the higher the degree of correlation between the marketing product and video content, the more likely the audience will accept the product. In terms of visual effects, when the appearance of the barrage advertisement appears in the eyes of the audience in a conspicuous manner such as a colored font, a suitable font size and a moderate flashing frequency, the viewer's eyes can be grasped. In terms of language expression, "Ode to Joy 2" concentrated on a barrage advertisement in a humorous way. The data collected by the barrage was 57 in response, 3180 in the barrage, and the response rate was 1.79% [18]. From these data, it can be seen that humorous bullet screen will touch consumers and affect their emotional changes, that is, it will affect consumers' pleasure and arousal, and thus affect consumers' purchase intention. Therefore, this paper proposes the following assumptions:

H3a: Barrage video advertisements have a significant positive impact on consumer arousal
H3b: Barrage video advertisements have a significant positive impact on consumer pleasure

3.4 Consumer emotional response and consumer purchase intention
Emotional response refers to the emotional response of the individual to happiness, joy, sadness or pain caused by the external environment [19]. Chen Kai and Zhao Na [22] found that emotional response has a significant positive impact on long-term care insurance purchase intention. Gao Lin et al [20] research shows that the emotional response of consumers significantly and positively affects the purchase intention. Similar to the above research perspective, the pleasure of online consumer emotional response significantly and positively affects the willingness to purchase products [4]. Consumers' perceived usefulness of the website interface enhances perceived pleasure, which in turn leads to impulsive purchases [21]. Therefore, this paper proposes the following assumptions:

H4a: Consumer arousal has a significant positive impact on consumer purchase intention
H4b: Consumer pleasure has a significant positive impact on consumer purchase intention

According to the above research hypothesis, the theoretical research framework of this paper is constructed by the SOR model consisting of the insertion mode, emotional response and purchase intention of online video advertisements.

![Figure 1. The impact of the insertion method of online video advertisements on consumer purchase intention](image)

4. Data collection and analysis
The questionnaire data of this study was mainly collected in two forms: electronic questionnaire and paper questionnaire. A total of 360 questionnaires were distributed, and after eliminating the invalid
questionnaires with a large number of consecutive identical options in the questionnaire, there were a total of 318. The effective questionnaire has an effective rate of 88.33%.

The structural model analysis method was used to conduct the final test of the proposed model. The research path model is constructed and the results are shown in Figure 2. In the overall model fit index results, the model has a chi-square value (CMIN) of 514.664, a degree of freedom of 156, and a chi-square degree of freedom ratio (CMIN/DF) of 3.299<5.00, RMSEA=0.085<0.09, IFI=0.870>0.80, CFI=0.869>0.80, PGFI=0.646>0.50, significant probability value P=0.000<0.01. Rejecting the null hypothesis, the partial adaptation index in the absolute fitness index, the value-added fitness index and the simple adaptation index reach the acceptable standard of the model. Therefore, the adaptation of the model to the actual sample data is better.

Figure 2. Structural equation model analysis results

The summary table of parameter estimation of the path model of this study is shown in Table 1. From the data in the table, the value of each path coefficient estimated by the maximum likelihood method is used, except for “Bullet Video Advertising → Consumer Pleasure”. The path coefficient values are all significant.

Table 1. Summary table of parameter estimates for this study path model

| Path                                | Standardized regression coefficient | Standard error | C.R.   | P     | Significant |
|-------------------------------------|-------------------------------------|----------------|--------|-------|-------------|
| Consumer pleasure ← patch ads       | .238                                | .229           | 2.662  | .008  | Yes         |
| Consumer arousal ← patch ads        | .243                                | .236           | 2.669  | .008  | Yes         |
| Consumer pleasure ← barrage ads     | .089                                | .187           | 1.078  | .281  | No          |
| Consumer arousal ← barrage ads      | .231                                | .195           | 2.702  | .007  | Yes         |
| Consumer pleasure ← implantable ads | .246                                | .124           | 3.238  | .001  | Yes         |
| Consumer arousal ← implantable ads  | .207                                | .127           | 2.689  | .007  | Yes         |
| Purchase intention ← pleasure       | .280                                | .029           | 4.054  | ***   | Yes         |
| Purchase intention ← arousal         | .201                                | .032           | 2.626  | .009  | Yes         |

5. Summary

5.1 Online video ad insertion method and consumer emotional reaction
The data shows that both network video patch advertisements and video implantable advertisements have a significant impact on consumer pleasure and arousal, so it is assumed that H1a, H1b, H2a, H2b are established; Barrage video advertising has a significant positive impact on consumer arousal, but has
no significant impact on consumer pleasure, so assume that H3a is established, assuming H3b is rejected. In terms of consumer arousal, the absolute value of its path coefficient is compared: network video patch ads (0.243) > barrage video ads (0.231) > video implantable ads (0.207). It can be seen that the network video patch advertisement has a more significant impact on the consumer awakening degree; in terms of consumer pleasure, the absolute value of the path coefficient is compared: video implantable ad (0.246) > network video patch ad (0.238) > barrage video ad (0.089), it can be seen that video-embedded advertising has a more significant impact on consumer pleasure.

5.2 Consumer emotional response and consumer purchase intention
Analysis of the sample data shows that both consumer pleasure and arousal have a positive impact on consumer purchase intention, assuming both H4a and H4b are established. Factors affecting consumer purchase intention are ranked in descending order of absolute value of path coefficient: consumer pleasure (0.280) > consumer arousal (0.201), it can be seen that the positive impact of consumer pleasure on consumer purchase intention is more significant.

6. Suggestions
In summary, the three ad insertion methods have their own advantages and disadvantages. In order to help the video platform or advertisers choose the right advertising method to achieve the best advertising results, the author gives the following two suggestions: First, to clarify the advertising budget, for large enterprises with more advertising budgets, they can choose network video patch ads or video implantable ads according to the characteristics of the brand; for companies with less advertising budget, it is recommended to place advertisements in the barrage video ads. Because the cost of barrage video ad is relatively low, although the advertising effect is not as good as the other two forms of advertising, it has a significant positive impact on consumer pleasure.

Second, the target audience of the brand should be clarified before the advertisement is placed, and the target audience can be segmented by age, gender, personality characteristics, etc. For example, when the target audience of the brand is a youth group. You can choose to place your ads on youthful idol dramas or draft star-watching programs with high traffic. Therefore, for enterprises with a relatively small advertising budget, they can choose barrage video advertising, which not only has a low advertising cost but also gathers a large number of "bullet screen families", thus exerting a subtle influence on them. When there are more advertising budgets, you can choose both video implantable ads and barrage video ads. Both of them can enhance the memory and acceptance of consumers’ ads to stimulate consumers’ willingness to purchase.

References
[1] China Internet Network Information Center released the 43rd, Statistical Report on the Development of China's Internet Network, J. National Library Journal, 28 (2019) 13.
[2] China Network Advertising Market Annual Monitoring Report - Short Edition 2019, iResearch Series Research Report. (2019).
[3] Mehrabian, Russell, An Approach to Environmental Psychology, J. MA, Cambrige: MIT Press. (1974).
[4] Jun Wan, Yu Qin and Hongxia Zhao, Research on the Influence Factors of Online Video Advertising on Emotional Response and Product Purchase Intention, J. Consumer Economy. 30 (2014) 59-65.
[5] Wenjuan Zhou, Bin Li, Exploring the Factors Affecting the Effect of Network Video Patch Advertising, J. Social Work and Management. 15 (2015) 82-86+92.
[6] Yumin Zhu, Yanfeng Zhou, The impact of brand familiarity and sponsorship on consumer response, J. Business Economics and Management. 1 (2013) 43-51.
[7] R.E. Petty, J.T. Cacioppo, Issue Involvement Can Increaseor Decrease Persuasion by Enhancing Message Relevant Cognitive Responses, J. Journal of Personality and Social Psychology. 37 (1979) 1915-1926.
[8] L. Neal, S. Bellman, S. Treleaven-Hassard, Unlocking the' reminder' potential when viewers pause programs: Results from a laboratory test of a new online medium, J. Journal of Advertising Research. 53 (2013) 444-454.

[9] Weilin Zhu, Research on the effect of network video patch advertising based on audience perception, D. Southwestern University of Finance and Economics. (2012).

[10] Yao Hong, Exploring the development of online video advertising in the new media era, J. Publishing Wide Angle. 07 (2017) 66-68.

[11] Ruilin Ye, Innovative Research on Implanted Advertising of Network-made Variety Shows, D. Zhengzhou University. (2017).

[12] Cheng Yi, Research on the impact of online video patch advertising on the consumption behavior of college students in Changsha, D. Hunan University. (2016).

[13] Zhang Ying, Research on Network Video Advertising, J. Journal of Ningbo University: Humanities. 7 (2010).

[14] C.A. Russell, Investigating the effectiveness of product placements in television shows: The role of modality and plot connection congruence on brand memory and attitude, J. Journal of consumer research, 29 (2002) 306-318.

[15] Sigen Song, Yongfa Li, Analysis of the combined effect of factors affecting the memory of implanted advertising audience, J. Journal of Jiangxi University of Finance and Economics, 06 (2018) 50-60.

[16] Nan Zhou, Dianwen Wang, Can significant implantable advertising bring better brand attitude? Research on the significant influence mechanism of implanted advertising, J. Nankai Management Review. 17 (2014) 142-152.

[17] W.B. Dodds, and K.B. Monroe, The effect of brand and price information on subjective product evaluations, J. Advances in consumer research. 12 (1985) 85-90.

[18] Xiaojie Gu, Yuqin Fan, Analysis of the content, form and effect of the video advertisement of the barrage, J. Modern Marketing. 10 (2018) 70-71.

[19] Fangjie Wang, An Empirical Study of the Influence of Reference Groups on Online Impulsive Purchasing Behavior Mediating Role of Emotional Response, D. Liaoning University. (2016).

[20] Lin Gao, Wenli Li, Yulong Ke, The Influence of Internet Word-of-Mouth on Consumers’ Intention to Buy in Socialized Business: The Mediating Role of Emotional Response and the Regulating Role of Curiosity, J. Journal of Industrial Engineering and Engineering Management. 31 (2017) 15-25.

[21] D.V. Parboteeah, J.S. Valacich, J.D. Wells, The influence of website characteristics on a consumer's urge to buy impulsively, J. Information Systems Research. 20 (2009) 60-78.

[22] Kai Chen, Na Zhao, Research on the Mechanism of Purchase Willingness of Long-term Nursing Insurance, Influencing Factors, Modes of Action and Paths. J. Financial Theory and Practice. 06 (2018) 99-103.

[23] Jin Peng, Mingxue Zhang, Audience Evasion and Effective Communication of Online Video Advertising, J. Editor of Friends. 03 (2015) 72-75.

[24] Zhao Chaoyang, Empirical analysis of the effect of online video advertising based on consumer perception, D. Dongbei University of Finance and Economics. (2010).