

Consumers' Responses to Different Advertising Formats and Their Impact on Purchase Intention

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Abstract. In the contemporary digital age, the advertising market has become increasingly competitive and diverse, with the proliferation of numerous advertising channels and formats. Consequently, enterprises seeking to develop effective travel marketing strategies must understand consumers' reactions to different ads. To address this issue, the study collected data via questionnaires and used statistical methods like descriptive stats, reliability tests, to examine various ads (banner, pop-up,). Results show different types of advertisements elicit distinct consumer reactions and have varying impacts on purchase intentions. Specifically, certain formats, including banner ads, insert ads, floating ads, superstitial ads, native ads, and online video ads, were found to positively influence purchase intentions. Conversely, pop-up ads and rich media ads did not significantly affect purchase willingness. Based on this, brand owners should optimize effective ads by refining content and improving presentation. For less effective ones, they should rethink design and strategies to suit consumer preferences, attract attention, and boost purchase willingness. Overall, the study offers valuable guidance for enterprises in complex advertising environments, helping them navigate and succeed in marketing.

Keywords: Advertising Formats, Consumer Responses, Purchase Intention, Statistical Analysis Methods.

1. Introduction

In today's digital age, advertising is a key part of enterprise marketing. Driven by the progress of the Internet and mobile technology, its forms and contents are diversifying rapidly. Consumers are constantly bombarded by various complex ads, from common banner ads to trendy native and engaging online video ads. For enterprises, choosing the right ad format is tough as each has a distinct impact on consumers and affects purchase intentions. This study focuses on exploring how consumers respond to different ad formats and how these responses shape purchase intentions. It also examines if personal characteristics like gender, age, and income can modify the relationship between ad formats and purchase intentions. Moreover, it plans to assess the abilities of different ad formats in attracting attention, conveying information, and influencing attitudes. By understanding these, valuable insights can be gained to help enterprises make better ad strategy decisions and improve marketing effectiveness in the complex advertising world.

Based on previous research findings and relevant theories, the authors propose the following hypotheses:

H1: Different advertising formats have significant differences in visual attractiveness, information usefulness, and credibility, which will lead to different degrees of acceptance and responses from consumers [1,2].

H2: Consumers' positive responses to advertising formats (such as finding the ad attractive, providing useful information) will positively affect their purchase intention, while negative responses (such as the ad being too intrusive, untrustworthy) will negatively affect purchase intention [3,4].

H3: Consumers' personal characteristics (such as gender, age, income) will, to some extent, moderate the relationship between advertising formats and purchase intention. For example, consumers of different genders or age groups may have different sensitivities and responses to specific advertising formats [5,6].

2. Methods

2.1. Research Design

This study adopts the questionnaire survey method to collect data on consumers' subjective experiences and purchase intentions regarding different advertising formats. The questionnaire design refers to relevant research literature in the field and is appropriately adjusted according to the actual situation to ensure the validity and reliability of the questionnaire content [7,8].

2.2. Sample Selection

Through online survey platforms and social media channels, consumers from different regions, age groups, genders, and income levels they were randomly selected as the research sample. A total of 231 valid questionnaires were collected, and the sample has a certain representative, being able to reflect the views and responses of different consumer groups to advertising formats [9,10].

2.3. Variable Measurement

2.3.1. Independent variables

Advertising formats, including banner ads, pop-up ads, interstitial ads, floating ads, superstitial ads, rich media ads, native ads, and online video ads. They the authors measured by asking consumers to evaluate each advertising format in terms of visual attractiveness, information usefulness, impact on the brand [11,12].

2.3.2. Dependent variable

Purchase intention, which was measured by asking consumers about their willingness to purchase the product after seeing the ad, the impact of the ad on the purchase possibility, the response to the promotional information in the ad, the impact of the ad's visual effect on the purchase decision, the impact of the ad's content detail on the purchase, and the impact of the ad's credibility on the purchase decision [13,14].

2.3.3. Control variables

Consumers' personal characteristics, including gender, age, and monthly income.

2.4. Data Analysis Methods

SPSS software was used to analyze the collected data, mainly employing descriptive statistical analysis, reliability and validity tests, correlation analysis, regression analysis, and factor analysis. Descriptive statistical analysis was used to present the basic characteristics of the sample and the distribution of each variable; reliability and validity tests were used to evaluate the reliability and validity of the questionnaire scale; correlation analysis was used to explore the linear relationships between variables; regression analysis was used to establish a prediction model between advertising formats and purchase intention and analyze the impact of each advertising format on purchase intention; factor analysis was used to extract common factors, simplify the data structure, and further reveal the potential relationships between variables [15].

3. Result

3.1. Sample Basic Information

As shown in Table 1, the sample exhibited distinct distributions in terms of gender, age, and monthly income. In terms of gender, the proportion of males was 49.78% and that of females was 50.22%, showing a relatively balanced split. For age distribution, 21.65% were under 18 years old, 15.58% were between 18 - 24 years old, 14.72% were between 25 - 34 years old, 17.32% were between 35 - 44 years old, 13.85% were between 45 - 54 years old, and 16.88% were 55 years old and above, demonstrating a diverse spread across different age brackets. When it came to monthly

income distribution, 20.78% had a monthly income below 3000 yuan, 25.11% were in the range of 3000 - 5999 yuan, 20.35% were between 6000 - 9999 yuan, 15.58% were between 10000 - 19999 yuan, and 18.18% were 20000 yuan and above, indicating a varied income situation within the sample.

Table 1. Frequency analysis

Numble	Option	Frequency	Percentage (%)	Cumulative Percentage (%)
Gender	Man	115	49.78	49.78
	Women	116	50.22	100.00
Age	Aged 18 and below	50	21.65	21.65
	Aged 18-24	36	15.58	37.23
	Aged 25-34	34	14.72	51.95
	Aged 35-44	40	17.32	69.26
	Aged 45-54	32	13.85	83.12
	Aged 55 and over	39	16.88	100.00
Income(monthly)	¥3,000 and below	48	20.78	20.78
	¥3000-5999	58	25.11	45.89
	¥6000-9999	47	20.35	66.23
	¥10000-19999	36	15.58	81.82
	¥20000 and over	42	18.18	100.00
Total		231	100.0	100.0

3.2. Questionnaire Scale Reliability and Validity Analysis

Reliability and validity analysis was carried out for each advertising format and purchase intention-related items. As shown in Table 1, the Cronbach's Alpha coefficients of each dimension were relatively high, which clearly demonstrated good internal consistency of the questionnaire. Specifically, the Cronbach's Alpha coefficient of the banner ad dimension reached 0.934, the one for the pop-up ad dimension was 0.946, and that of the interstitial ad dimension was as high as 0.955. In addition to the Cronbach's Alpha coefficients, other indicators like the corrected item-total correlation, common factor variance, and KMO value also, as presented in Table 2, indicated good structural validity of the scale [16,17].

Table 2. Frequency analysis

Dimension	Item	Number	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha	Communalities	KMO
Banner Ads	1. The visual appeal of banner ads will increase my interest in the product.	A1	0.742	0.930	0.934	0.670	0.877
	2. I am more inclined to click on larger-sized banner ads.	A2	0.824	0.920	0.789		
	3. Dynamic banner ads are more attractive to my attention than static ones.	A3	0.794	0.924	0.745		
	4. The frequent appearance of banner ads will increase my memory of the brand.	A4	0.869	0.914	0.835		
	5. I consider banner ads	A5	0.809	0.922	0.748		

Dimension	Item	Number	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha	Communalities	KMO
	as a reliable source of information.						
	6. Banner ads will affect my purchasing decision.	A6	0.813	0.922	0.753		
Pop-up Ads	1. The sudden appearance of pop-up ads will attract my attention.	B1	0.807	0.940	0.946	0.747	0.875
	2. The content of pop-up ads is usually useful.	B2	0.875	0.931	0.834		
	3. I will click to view the product details because of pop-up ads.	B3	0.862	0.932	0.817		
	4. Pop-up ads give me a deeper impression of the brand.	B4	0.860	0.933	0.823		
	5. Pop-up ads make me feel that the brand has a strong promotion intention.	B5	0.835	0.936	0.793		
	6. Pop-up ads will affect my purchasing decision.	B6	0.783	0.942	0.727		
Interstitial Ads	1. The full-screen display of interstitial ads makes it impossible for me to ignore.	C1	0.788	0.955	0.955	0.722	0.910
	2. Interstitial ads usually provide useful information.	C2	0.900	0.942	0.872		
	3. Interstitial ads will arouse my curiosity about the brand	C3	0.891	0.943	0.860		
	4. The design and content of interstitial ads will affect my brand impression.	C4	0.907	0.941	0.879		
	5. Interstitial ads make me think the brand is very professional.	C5	0.825	0.951	0.770		
	6. Interstitial ads will affect my purchasing decision.	C6	0.850	0.948	0.804		
Floating Ads	1. The movement of floating ads on the page will attract my attention.	D1	0.824	0.939	0.939	0.824	0.920
	2. The content of floating ads is usually valuable.	D2	0.854	0.939	0.815		

Dimension	Item	Number	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha	Communalities	KMO
	3. I will click to view the product details because of floating ads.	D3	0.875	0.937	0.841		
	4. Floating ads give me a deeper impression of the brand.	D4	0.887	0.935	0.855		
	5. Floating ads make me feel that the brand is very active.	D5	0.802	0.947	0.743		
	6. Floating ads will affect my purchasing decision.	D6	0.807	0.945	0.747		
Superstitial Ads	1. The appearance time of superstitial ads is well arranged.	E1	0.846	0.939	0.939	0.802	0.898
	2. Superstitial ads usually provide useful information.	E2	0.877	0.935	0.841		
	3. Superstitial ads will arouse my curiosity about the brand.	E3	0.772	0.949	0.701		
	4. The design and content of superstitial ads will affect my brand impression.	E4	0.841	0.939	0.798		
	5. Superstitial ads make me think the brand is very professional.	E5	0.856	0.937	0.817		
	6. Superstitial ads will affect my purchasing decision.	E6	0.880	0.935	0.850		
Rich Media Ads	1. The interactivity of rich media ads will attract my attention.	F1	0.745	0.953	0.959	0.663	0.878
	2. The video and audio content in rich media ads is usually very interesting.	F2	0.828	0.940	0.782		
	3. I will click to view the product details because of rich media ads.	F3	0.882	0.934	0.849		
	4. Rich media ads give me a deeper impression of the brand.	F4	0.876	0.935	0.848		
	5. Rich media ads make me feel that the brand is very creative.	F5	0.904	0.932	0.885		
	6. Rich media ads will affect my purchasing decision.	F6	0.843	0.939	0.795		

Dimension	Item	Number	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha	Communalities	KMO
Native Ads	1. The content of native ads blends well with the platform, making it easier for me to accept.	G1	0.850	0.954	0.959	0.802	0.923
	2. The information provided by native ads is usually useful.	G2	0.880	0.950	0.844		
	3. I will click to view the product details because of native ads.	G3	0.905	0.948	0.876		
	4. Native ads give me a deeper impression of the brand.	G4	0.880	0.950	0.843		
	5. Native ads make me feel that the brand is very considerate.	G5	0.871	0.951	0.831		
	6. Native ads will affect my purchasing decision.	G6	0.838	0.955	0.787		
Online Video Ads	1. The content of online video ads is usually very attractive.	H1	0.858	0.941	0.941	0.815	0.922
	2. The playback of online video ads does not annoy me.	H2	0.840	0.944	0.792		
	3. I will click to view the product details because of online video ads.	H3	0.796	0.948	0.735		
	4. Online video ads give me a deeper impression of the brand.	H4	0.882	0.939	0.847		
	5. Online video ads make me think the brand is very professional.	H5	0.871	0.940	0.835		
	6. Online video ads will affect my purchasing decision.	H6	0.858	0.941	0.817		
Part Three: Purchase Intention	1. I often have the purchase intention for a product because of seeing an advertisement.	I1	0.823	0.933	0.943	0.778	0.898
	2. The frequent appearance of advertisements will increase my purchase possibility.	I2	0.855	0.929	0.819		
	3. I will have the purchase desire because of the preferential	I3	0.813	0.934	0.766		

Dimension	Item	Number	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha	Communalities	KMO
	information in the advertisement.						
	4. The visual effect of the advertisement will affect my purchasing decision.	I4	0.870	0.927	0.832		
	5. The more detailed the content of the advertisement is, the more likely I am to purchase.	I5	0.788	0.938	0.722		
	6. The credibility of the advertisement will affect my purchasing decision.	I6	0.826	0.933	0.771		

3.3. Correlation Analysis Results

Correlation analysis was conducted, and as shown in Table 3, it was found that banner ads had a significant positive correlation with multiple other advertising formats including pop-up ads, interstitial ads, floating ads, superstitial ads, rich media ads, native ads, online video ads, and also with purchase intention. Specifically, the correlation coefficients were 0.903 for the correlation with pop-up ads, 0.703 with interstitial ads, 0.521 with floating ads, 0.654 with superstitial ads, 0.593 with rich media ads, 0.639 with native ads, 0.585 with online video ads, and 0.748 with purchase intention. This set of data in Table 3 clearly illustrates that there exists a close association between banner ads and the other advertising formats as well as purchase intention. It implies that the performance of one advertising format, such as banner ads in this case, may have an impact on consumers' perceptions of other advertising formats and further influence their purchase intention [18,19].

Table 3. Pearson correlation

	Banner Ads	Pop-up Ads	Interstitial Ads	Floating Ads	Superstitial Ads	Rich Media Ads	Native Ads	Online Video Ads)	Purchase intention
Banner Ads	1								
Pop-up Ads	0.903**	1							
Interstitial Ads	0.703**	0.711**	1						
Floating Ads	0.521**	0.522**	0.739**	1					
Superstitial Ads	0.654**	0.679**	0.756**	0.563**	1				
Rich Media Ads	0.593**	0.582**	0.718**	0.718**	0.676**	1			
Native Ads	0.639**	0.624**	0.700**	0.577**	0.684**	0.877**	1		
Online Video Ads	0.585**	0.587**	0.654**	0.572**	0.608**	0.831**	0.871**	1	
Purchase intention	0.748**	0.743**	0.810**	0.702**	0.785**	0.868**	0.897**	0.879**	1

* $p < 0.05$ ** $p < 0.01$

3.4. Regression Analysis Results

For the analysis, eight advertising formats were set as independent variables while purchase intention was taken as the dependent variable for linear regression analysis. As shown in Table 4, the model formula was presented as: Purchase Intention = -0.000 + 0.113×Banner Ads + 0.052×Pop-up Ads + 0.075×Interstitial Ads + 0.111×Floating Ads + 0.162×Superstitial Ads + 0.049×Rich Media Ads + 0.246×Native Ads + 0.316×Online Video Ads. The R-square value of the model, which can also be clearly seen in Table 4, was 0.931. This indicates that these independent variables could explain 93.1% of the variation in purchase intention, demonstrating a relatively high explanatory power of the model. Furthermore, as shown in Table 1, the model passed the F-test ($F = 372.731$, $p = 0.000 < 0.05$), which validates the overall significance of the regression model. When conducting further analysis on the regression coefficients of each advertising format as depicted in Table 4, it was found that banner ads, interstitial ads, floating ads, superstitial ads, native ads, and online video ads had a significant positive impact on purchase intention. In contrast, pop-up ads and rich media ads had no impact on purchase intention [20].

Table 4. Regression Analysis (n=231)

	Unstandardized coefficients		Standardized coefficients	<i>t</i>	<i>p</i>	Collinearity diagnostics	
	B	Standard error	<i>Beta</i>			VIF	tolerance
Constant	-0.000	0.018	-	-0.000	1.000	-	-
Banner Ads	0.113	0.043	0.113	2.648	0.009**	4.794	0.273
Pop-up Ads	0.052	0.043	0.052	1.197	0.232	4.011	0.206
Interstitial Ads	0.075	0.036	0.075	2.076	0.039*	4.195	0.238
Floating Ads	0.111	0.030	0.111	3.704	0.000**	2.892	0.346
Superstitial Ads	0.162	0.030	0.111	3.704	0.000**	2.844	0.352
Rich Media Ads	0.049	0.045	0.049	1.070	0.286	3.621	0.201
Native Ads	0.246	0.047	0.246	5.281	0.000**	4.980	0.243
Online Video Ads	0.316	0.038	0.316	8.368	0.000**	4.583	0.218
<i>R</i> ²	0.931						
Adjust <i>R</i> ²	0.928						
<i>F</i>	$F(8,222) = 372.731, p = 0.000$						
D-W value	1.764						

Note: The dependent variable = purchase intention.

* $p < 0.05$ ** $p < 0.01$

4. Discussion

4.1. Results Explanation

4.1.1. Differences in the impact of advertising formats

Banner ads, interstitial ads, floating ads, superstitial ads, native ads, and online video ads had a significant positive impact on purchase intention. This may be because these advertising formats have unique advantages in attracting consumers' attention, delivering product information, or shaping brand image. For example, the wide display of banner ads and the vivid content of online video ads may stimulate consumers' purchase interest. Pop-up ads and rich media ads had no impact on purchase intention. Pop-up ads may be too intrusive and easily arouse consumers' aversion, although they have a certain role in attracting attention, the negative effects may offset the positive impact on purchase intention; rich media ads, although having interactivity and rich content, may fail to effectively

convey key product information or match consumers' needs in practical applications, resulting in an inability to affect purchase intention.

4.1.2. The moderating role of consumers' personal characteristics

This study did not deeply explore the moderating role of consumers' personal characteristics in the relationship between advertising formats and purchase intention. However, from the basic sample information, it can be seen that different genders, ages, and income groups may have differences in their exposure and responses to advertising. Future research can further analyze these differences to provide more targeted suggestions for precision marketing.

4.2. Research Contributions

4.2.1. Theoretical contributions

This study enriches the research in the fields of advertising effectiveness and consumer behavior by comprehensively analyzing multiple advertising formats and revealing the impact mechanism of different advertising formats on purchase intention. It also verifies the effectiveness of the questionnaire scale in measuring consumers' responses to advertising formats and purchase intention, providing a reliable measurement tool and promoting the development of research methods in this field.

4.2.2. Practical significance

Enterprises can optimize their advertising strategies and allocate resources rationally based on the research results. They can increase the investment in advertising formats with significant positive impacts on purchase intention and optimize their content and display methods. For pop-up ads and rich media ads, enterprises need to re-examine their design and placement strategies to improve consumers' acceptance and purchase intention.

4.3. Research Limitations

4.3.1. Sample limitations

This study adopted a convenience sampling method, which may lead to sampling biases and limit the representativeness of the sample. Future research could adopt more rigorous sampling techniques and expand the sample size to improve the universality of the results.

4.3.2. Research design limitations

The study is based on questionnaire survey data and is a cross-sectional study, unable to determine the causal relationship between variables. Future research could adopt experimental or longitudinal research designs to enhance the understanding of the causal relationship between advertising formats and purchase intention. Additionally, the study did not consider other factors that may affect purchase intention. Future research could incorporate more relevant variables and build more complex models to provide a more comprehensive explanation of consumer purchase behavior.

4.3.3. Future research directions (optional - combined with previous limitations)

Future research could focus on addressing the limitations of this study. For example, by using more advanced sampling methods and research designs to establish causal relationships. It could also explore the impact of other factors on purchase intention and further analyze the moderating role of consumers' personal characteristics. This would help to provide a more complete understanding of consumers' responses to different advertising formats and their impact on purchase intention.

5. Conclusion

This study systematically analyzed consumers' responses to various advertising formats and their impact on purchase intention. Through rigorous research methods, valuable conclusions have been reached.

The study found that different advertising formats led to diverse responses among consumers. Banner ads, interstitial ads, floating ads, superstitial ads, native ads, and online video ads had a significant positive impact on purchase intention, likely due to their ability to attract attention and convey information effectively. In contrast, pop-up ads and rich media ads did not show a significant impact, with pop-up ads being too intrusive and rich media ads perhaps failing to meet consumers' needs. Although consumers' personal characteristics did not strongly moderate the relationship between advertising formats and purchase intention in this study, it remains an area worthy of further exploration.

Theoretically, this research enriches the understanding of advertising effectiveness and consumer behavior. It provides a more comprehensive framework for future studies and validates the questionnaire scale as a useful measurement tool. Practically, enterprises can use these findings to optimize their advertising strategies, such as increasing investment in effective formats and improving the design of less effective ones.

However, the study had limitations. The convenience sampling method may have introduced biases, and the cross-sectional design could not establish causality. Future research should adopt more rigorous sampling and research designs. Additionally, other factors affecting purchase intention, such as product type and consumer emotions, should be considered. Overall, while this study offers useful insights, further research is needed to overcome its limitations and better understand the complex relationship between consumers and advertising.

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