Exploring Consumer Perception of Pop-Up Advertisement

Pei-Yu Hsu, National Chung Hsing University, Taiwan
Ying-Jiun Hsieh, National Chung Hsing University, Taiwan
Lan-Ying Huang, National Changhua University of Education

Abstract

Nowadays, not only on the computer but also the smart phones and other mobile devices are increasingly common, Internet advertising has become more various. There are many different options for advertisers to use. But when intrusive advertising appears too often, it influences the reading quality of browsing the websites. Much literature shows that the relationship between pop-up ads and user is negative. However, there is little specific guidance on the elements that make users feel bad.

The research framework was demonstrated by the exploratory factor analysis and confirmatory factor analysis. This study explores users' perception of pop-up advertisement. The results show that most perceptions are negative. We suggest that advertisers should emphasize on the effectiveness of Internet advertising.

Introduction

The last decades, Internet advertisements are getting considerable attentions not only from academy of business studies but also from people in general. The World Wide Web has been around for many years, but compared to other traditional advertising such as on TV, broadcast, or DM, there are far fewer studies that have researched the perceptions and attitudes by consumers towards internet advertising. (Kristen Aspray, 2006)According to IAB Internet Advertising Revenue Report, which survey Internet advertising revenues climb to landmark high of nearly $10.7 billion, marking 15% year-over-year growth.

Internet advertising tries to disseminate information in order to influence buyers and sellers business deal. But, unlike other media and advertising, consumers can get more information by moving his or her mouse to click the ad, or take the next step and purchase the product in the same session on the Internet. (Efraim Turban, David King and Judy Lang, 2011) Randall Rothenberg, President and CEO of IAB (Internet Advertising Bureau) said" Marketers' trust in interactive to deliver. It is indicative of the digital age in which we live, advertisers need to effectively reach targeted audiences wherever they are consuming information or entertainment."

The advertising industry had grown steadily over the past few years. According to the report from Interactive Advertising Bureau, Internet advertisements further blur the distinction between advertising and marketing communications. By the transition of mass communication, advertisers try to find new effective ways to communicate with consumers. But, when advertisers increase more intrusive ads include pop-up and pop-under ads, Is it really effectiveness to customers? Therefore, this study aims to exploring the main factors influencing the consumer perception of pop-up advertisement by using data collected in Taiwan.

1. Research method

1.1 Research design and methodology
The purposes of this study are exploring consumer perception of pop-up advertisement. Sequentially, a two-phase questionnaire was designed to collect the first impressions that while the respondents browsing the web, when participants encounter a pop-up advertisement. First, we used a specialized website, namely Google Docs, was used in order to collect the keywords online. A total of fifty opened questionnaires which are distributed on the Internet. The study listed top 16 keywords that frequency over four times: annoying, hate, dislike, closedown, always appear, block, coercion, special, helpless, sudden, porno, practicality, virus, selling, limited to marketing, irritated. Second, after we collected the keywords from first-phase questionnaires, we use them to make our second-phase questionnaires that used during the survey in order to identify the characteristic. The second-phase questionnaire consists of 23 items and is divided into two parts. Part I contains 16 keywords that we collect from first-phase questionnaires. this part we used Likert five point scale from one(extremely disagree) to five(extremely agree).; Part II contains demographic statistics which includes participants' current occupation, gender, different disparity age and education level, personal income, frequency of encounter pop-up advertising and species.

Table 1: First impressions for pop-up ads from first-phase questionnaire

keyword	frequency	keyword	frequency
Annoying	27	helpless	5
Hate	12	Sudden	5
Dislike	11	Porno	4
Closedown	11	Practicality	4
Always appear	9	Virus	4
Block	6	Selling	4
Coercion	6	Limited to marketing	4
special	5	irritated	4

1.2 Descriptive statistics

There were 113 females and 296 males in this study. The respondents from males occupied 72.3% but females only occupied 27.6%.

Gender	Frequency	Percent
Female	113	27.6%
male	296	72.3%

There were 67 respondents whose age was under 20 years old. There were 326 respondents whose age was between 21 to 30, 10 respondents whose age was between 31 to 40, 4 respondents whose age was between 41 to 50 and 2respondents whose age was greater than 51. The age from 21 to 30 mainly occupied about 79.7% of the respondents.

Age	Frequency	Percent
Below 20	67	16.3%
21-30	326	79.7%
31-40	10	2.4%
41-50	4	2%
Higher 51	2	0.4%

The level of education of sample can be divided into high school, university and graduated university. Most of the respondents were graduated from university. There were only 11 responder had graduated from high school, 170 respondents were graduated from graduated university.

Education	Frequency	Percentage
High school	11	2.6%
University	228	55.7%
Graduated university	170	41.5%

Respondents held a variety of positions in the business. The top three were student, service industry, government career and manufacturing industry. There were 298 respondents whose was student. There were 65 respondents whose job was service industry. There were 19 respondents whose job was government career and manufacturing industry. The respondents from student occupied 51.1%, service industry occupied 15.8% and government career and manufacturing industry both occupied 4.6%.

Job	Frequency	Percentage
Student	298	51.1%
Government career	19	4.6%
Service industry	65	15.8%
Manufacturing industry	19	4.6%
Agriculture	1	0.2%
others	7	1.7%

There were 36 respondents (8.8%) occurred the pop-up ads less than once a week, 114 respondents (27.8%) occurred the pop-up ads at least once a week, 144 respondents (35.2%) occurred the pop-up ads more than 3 times a week, 115 respondents (28.1%) occurred the pop-up ads every day.

Frequency	Frequency	Percentage
Less than once a week	36	8.8%
At least once a week	114	27.8%
More than 3 times a week	144	35.2%
Everyday	115	28.1%

Respondents occurred pop-up ads at variety of website when they surfing the Internet. The top three were game, video and social network. There were 280 respondents whose indicated game (31%). There were 278 respondents whose indicated video (30.8%). There were 139 respondents whose indicated social network (15.4%).

Kind	Frequency	Percentage
Game	280	31%
Video	278	30.8%
Blog	103	11.4%
Social network	139	15.4%
News/weather	36	3.9%
education	15	1.6%
others	50	5.5%

There were 222 respondents (54.2%) incoming below 10000, 105 respondents (25.6%) incoming from 10001 to 20000 and 54 respondents (13.2%) incoming from 20001 to 30000 and 28 respondents (6.8%) incoming higher than 30001.

Incomings	Frequency	Percentage
Below 10000	222	54.2%
10001-20000	105	25.6%
20001-30000	54	13.2%
Higher 30001	28	6.8%

2.3 Research framework

This thesis is organized as follows. Chapter 1 introduces the background, motivation and objectives. Chapter 2 explains the research design and descriptive statistics. Chapter 3 conducts an exploratory factor analysis and confirmatory factor analysis. Lastly, chapter 4 summarizes the findings, conclusions, limitations, future study and discusses the managerial implications based on the findings. Figure 1 shows the research framework.
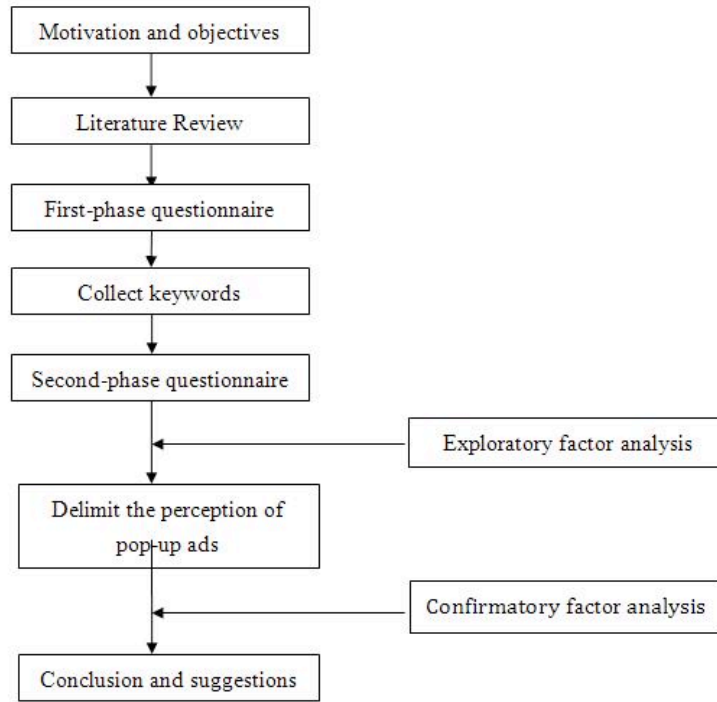
```
┌─────────────────────────────┐
│  Motivation and objectives  │
└─────────────────────────────┘
               │
               ▼
┌─────────────────────────────┐
│      Literature Review      │
└─────────────────────────────┘
               │
               ▼
┌─────────────────────────────┐
│   First-phase questionnaire │
└─────────────────────────────┘
               │
               ▼
┌─────────────────────────────┐
│       Collect keywords      │
└─────────────────────────────┘
               │
               ▼
┌─────────────────────────────┐
│  Second-phase questionnaire │
└─────────────────────────────┘
               │                    ┌──────────────────────────────┐
               │◄───────────────────│  Exploratory factor analysis │
               ▼                    └──────────────────────────────┘
┌─────────────────────────────┐
│   Delimit the perception of │
│        pop-up ads           │
└─────────────────────────────┘
               │                    ┌──────────────────────────────┐
               │◄───────────────────│ Confirmatory factor analysis │
               ▼                    └──────────────────────────────┘
┌─────────────────────────────┐
│  Conclusion and suggestions │
└─────────────────────────────┘
```

Figure 1: Research Framework

2. Data analysis result

2.1 Exploratory factor analysis
The analyses' results confirmed the matrix high factor ability. KMO was 0.879, classified by Kaiser-Meyer-Olkin (1974). The criterion of KMO is as follow: 0.9<KMO: Very suitable, 0.8<KMO: Suitable, 0.7<KMO: Ordinary, 0.6<KMO: Not very suitable, KMO<0.5: Not suitable.

Table 2: KMO and Bartlett's test

Kaiser-Meyer-Olkin Measre of Sampling Adequacy		0.879
Bartlett's Test of Sphericity	Approx.Chi-Square	2134.995
	Df	66
	Sig.	0.000

Through Principal Components Analysis, it was possible to decide how many factors would be extracted. All the criteria adopted (eigenvalues higher than 1.0) pointed to the existence of 3 factors. The validity or quality of the items that composed each factor was also analyzed, based on Pasquali's (2008) statement that a valid item is the one that well represents the factor; that is, an item with a good factor loading. Comrey and Lee (1992) classified items with loadings higher or equal .71 as excellent; higher or equal .63 as very good; higher or equal .55 as good; higher or equal .45 as reasonable; and higher or equal .32 as poor. Thus, as to the items' quality, 80% of them were classified as excellent.

Table 3: Results of principal components analysis

	P1	P2	P3
Hate	0.861		
Dislike	0.854		
Annoying	0.839		
Closedown	0.761		
Block	0.748		
Irritated	0.668		
Porno		0.769	
Virus		0.717	
Sudden		0.671	
Practicality			0.846
special			0.828

In order to measure the reliability of our questionnaire, this research uses Cronbach's α reliability analysis. Adopting the value of Cronbach is based on Guieford (1965)'s point of view that if $\alpha<0.35$ is considered low reliability, $0.35<\alpha<0.7$ as average, and $\alpha>0.7$ as high reliability. According to the reliability statistics shows in Table 4. The reliability of the research in P1 is described using α coefficient – its value is 0.904, which concludes that factors in this dimension are of high reliability. 0.622 for P2, 0.609 for P3. All coefficients in this questionnaire are above average reliability.

Table 4: Results of Cronbach's α reliability analysis

Dimensions	Factors	Cronbach's Alpha
P1	Dislike, hate, annoying, block, closedown, irritated	0.904
P2	Porno, sudden, virus	0.622
P3	Practicality, special	0.609

3.2Confirmatory factor analysis

Confirmatory factor analysis is applied to test the construct validity of the research model is indeed adequate, appropriate, and CFA testing has to fit the condition: All factor loadings must have statistical significance criteria > 0.5.

Table 5: Standardized regression weights

Dimensions	Factors	Loading
P1	Dislike	0.853
P1	Hate	0.883
P1	Annoying	0.834
P1	Block	0.728
P1	Closedown	0.688
P1	Irritated	0.698
P2	Porno	0.646
P2	Sudden	0.531
P2	Virus	0.620
P3	Practicality	0.619
P3	special	0.715

3.3 Model fitness

In order to assess the degree of fit, several goodness of- fit indices were computed. In Table 6, the results show that all indexes have conformed to criterion.

Table 6: Results of model fitness

Index	Criterion	Result	suitable
Absolute Fit Measures			
RMR	<0.08	0.030	Yes
RMSEA	<0.08	0.073	Yes
GFI	>0.8	0.946	Yes
AGFI	>0.8	0.913	Yes
Incremental Fit Measures			
NFI	>0.9	0.932	Yes
RFI	>0.9	0.908	Yes
IFI	>0.9	0.952	Yes
TLI	>0.9	0.935	Yes
CFI	>0.9	0.952	Yes
Parsimonious Fit Measures			
PGFI	>0.5	0.588	Yes
PNFI	>0.5	0.694	Yes
PCFI	>0.5	0.709	Yes
CMIN/DF	<5.0	3.199	Yes

4. Conclusion

4.1 Finding and managerial implication
In this study, we made conclusions based on the results and findings of this research. We were extracted three main factors from exploratory factor analysis. There were negative consciousness, frightened and convenience. In addition, negative consciousness had significant relationships with frightened, but also had negative relationship with convenience as indicated by confirmatory factor analysis.

About the negative consciousness, we can find many participants thought once they occurred the pop-up ads, they feel dislike, hate even irritated. For them, they all feel loath, but in different level. Compared to other types of advertising, the reason why pop-up ads should be a particularly outrageous because it just surprisingly appearance while Internet users were browsing the website. So it is very important that how to strike a balance between the timing of pop-up ads appear and the general process of surfing the Internet.

First, we also found the Internet users feel annoying once they occurred the pop-up ads. The more likely explanation rests in the reason of frequency. Pop-up ads for them were appearance too often. Second, they thought the pop-up ads always block their view. When they open the windows, when they want to handle their own affairs, the pop-up ads just show in the middle of the window. So we thought it is important to place the advertisement in which side. Advertiser may try to put the ads in the four corners of window that not only attract the Internet users' attention but also not affect them browsing the website.

Next is frightened, in this dimension there are three factors cause Internet users to feel scared. First is porno ads, it shows that almost users had experience to see porno ads in form of pop-up ads. For this aspect, we thought advertisers should be more strict checks for the advertising content. Second, pop-up ads always sudden appear in web page, it could take a gradual approach to enter the web window, make Internet users feel more comfortable. Third, when the most participants saw the pop-up ads, they usually subconsciously think this advertising was linked to a virus or other harmful website.
Final is convenience, although we received some positive keywords from pre-questionnaire, but the result showed that lower than intermediate values.
So, most of the participants in Taiwan were not have positive comments about the pop-up ads. First is practically, they thought the content of the advertising were useless for them. For this regard, we suggest advertisers should different Internet users' using characteristics and habits, to select the appropriate advertising content. Second is special. From the early 20th century, advertising evolved to today, pop-up ads has become no longer particularly for Internet users. We recommend advertiser should be emphasized pop-up ads features, and then further extending other novel forms of advertising to attract contemporary users' attention.

4.2 Research limitation and future study
There are several limitations to this study, requiring further examination and additional research. The first limitation is the problem of external validity, the ability to generalize the results outside Taiwan. However, due to the similarity in the cultural origins, we believe these results provide generalized managerial implications for other

country. Second, this study concludes four factors in perception of customers which could be useful in electronic commerce area; some other key factors could not be discussed in this research.

There are two directions that future studies can follow. First, if we try to generalize the results outside of Taiwan, due to different custom, social, and ethical implications, we may face some problems like external validity or cultural differences from different countries. Cultural differences may influence the perception of pop-up ads. Another one is more studies could accord different situation or various kind of pop-up ads as moderating variable. It would be more informative for advertisers to understand what customers think.

References

1. Efraim T., David K. and Judy L. (2011), "Introduction to electronic commerce", Person Education, Inc., publishing as prentice Hal, one lake Street, upper saddle River, New Jersey, v.3
2. Gisela D., Elaine R. N., Iara N. and Kesia R. (2012), "Human resources management policies and practices scale (HRMPPS): Exploratory and confirmatory factor analysis", Brazilian administration review, Rio de Janeiro, v. 9, n. 4, art. 2,pp. 395-420, Oct./Dec.
3. Hairong L. and John D. L. (2004), "Internet advertising formats and effectiveness"
4. James S. 2005, "Intellectual property law and competitive internet advertising technologies: why legitimate pop-up advertising practices should be protected", St. John's law review, volume 79, issue 1, number 1.
5. Joshua R. (2002), "Annoying…but effective", the wall street journal
6. Kristen A. (2006), "Non-lntrusive Click-Through Advertisements: A Study of Perceptions and Uses by Internet Consumers"
7. Steven M.E., Hairong L., and Joo-Hyun L. (2002), "Forced exposure and psychological reactance: antecedents and consequences of the perceived intrusiveness of pop-up ads", Journal of advertising, Volume XXXI, Number 3.
8. Sweta C. T., Ji H. S., and Val L. (2010), "Do animated banner ads hurt websites? The moderating roles of website loyalty and need for cognition", Academy of marketing studies journal, Volume 14, Number 1.
9. Zeynep C. O., Mehmet Z. F. and Hicran A. B. (2009), "Confirmatory and exploratory factor analysis of the caregiver quality of life index-cancer with Turkish samples", Springer Science+Business Media B.V.