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Emotional and Cognitive Responses Towards Facebook Social Ads™

Abstract

This study investigates users' emotional responses toward Facebook Social Advertising. It also examines the relationships between consumers' emotional responses and cognitive perceptions such as attention, perceived relevance and perceived intrusiveness. Three hundred and twenty college students participated in a web-based survey. The results reveal that the valences of perceived relevance are positively related to emotional responses, while perceived intrusiveness has a negative relationship with emotional responses. A one-way ANOVA analysis shows that respondents perceive Facebook business pages as the most relevant to themselves and the least intrusive. Additionally, participants have a positive feeling towards business pages, yet harbor negative feelings towards both Facebook banner ads and news feed ads. Managerial implications for the prospect of advertising in social networking sites are discussed.

Keywords: Facebook Social Ads™, emotional responses, relevance, attention, intrusiveness

Introduction

Life without social network services such as Facebook is almost unthinkable for today's college students. Since its launch in 2004, Facebook has become a basic tool for and a platform of social interaction among students. This study examines how college students feel about advertising on the social networking site (SNS) - Facebook, which was recently identified by Google as the top visited destination on the Internet (Google, 2011). As the most popular and fastest growing SNS, Facebook originated as a uniquely college website where users required an ".edu" email address to join. Ever since, it expanded to include users of different backgrounds, work environments and ages. The user-friendly navigation of Facebook has made it easy for users to access applications such as profile, inbox, photos, notes, and events. The latest statistics report from Facebook claims that it has more than 750 million active users, and half of them visit this site on any given day (Facebook, 2011).

Companies are willing to pay considerable expenditure to analyze that are the right customers and target them on Facebook. According to eMarketer, a leading marketing research company, advertisers in the States would spend $3.08 billion on social networking sites (SNS) by the end of 2011, which is a 55% increase over the $1.99 billion they spent in 2010. Moreover, amongst all of the SNS, about 68% of this spending will go to Facebook (eMarketer, 2011). As advertisers increasingly seek various ways to break through advertising clutter, and achieve greater communication effectiveness on SNS, more careful consideration needs to be given to the selection and utilization of different forms of advertising on these platforms.

Previous studies have investigated advertising in various social networking sites from a company perspective (Ehrlich & Shami, 2010; Günther, Krasnova, Riehle & Schöndienst, 2009). Albers-Miller, Lyons and Lyons (2010) investigated Facebook advertisements directed to children. Kelly, Kerr and Drennan (2009, 2010) explored teenagers' perspectives about advertising in SNS. Given that college students are among the first to adopt and utilize this tool (Lewis, 2010), empirical

research on college students' use of Facebook has focused mainly on the online profile content and privacy issues (Debatin, Lovejoy, Horn & Hughes, 2009; Lewis, Kaufman & Christakis, 2008), as well as their motivations for using Facebook (Pempek, Yermolayeva & Calvert, 2009; Raacke & Bonds-Raacke, 2008). Because SNS usage is so prevalent among college students, it is important to examine how they perceive various business activities on sites like Facebook that they use on a regular basis. However, little attention has been given to the topic.

Accordingly, the purpose of this study is to address these gaps, and to explore users' emotional responses to different types of Facebook Social Ads and how they feel about advertising on Facebook in general. It also examines the relationships between emotional responses (pleasure, arousal, dominance) and cognitive perceptions such as attention, relevance and perceived intrusiveness.

In a previous press release, Facebook (2007) defined Social Ads™ as "unique ads with social actions, which act as trusted referrals and reinforce the fact that people influence people". Social Ads™ "combine social actions from friends – such as 'like' of a business page or review of a restaurant – with an advertiser's message, which enables advertisers to deliver more tailored and relevant ads to users" (Facebook, 2007, p. 1). For the purpose of the current study, Facebook Social Ads are defined as a form of ad system that engages the social context of the user viewing the ad and intends to persuade the user to purchase or take actions upon products, ideas or services.

Literature Review

Facebook Social Ads™

As mentioned previously, Facebook's Social Ads is the new ad system that leverages personal preference, friend recommendations, and other forms of social influence. They can appear either on a user's news feed (home page) as sponsored "news" stories or as banner ads on the right side of the each page. In addition, companies can create pages that allow users to interact and with their favorite brands and products in the same way they interact with their friends. In this study, all three formats of

Facebook Social Advertising - banner ads, Newsfeed Social ads, and Business pages - are tested.

Newsfeed ads: Facebook introduced the "News Feed" in 2006. News Feed is the main content of one's home page. It constantly updates online activities of a user's friends. Users would get alerts or news stories when their friends upload pictures, befriend new people, "like" certain pages on Facebook, etc. On social networking sites, users are more likely to pay attention to their friends' status or updates than alternative places on the interface (Hsieh, Stu, Liang & Chao, 2009). Newsfeed ads appear as: 1) social stories in the News Feed showing that one of your friends has "liked" a brand or company; 2) sponsored updates from a business page that you have "liked."

Facebook Banner Ads: Banner advertisement, the most common and standard advertising format of online marketing, has been in use since 1994 (Cho, 2003). Banner ads on Facebook are displayed on the right side of pages. Compared with News Feed Social ads, banner ads are more tailored and relevant to individual users. As they are personalized based on users' own profile pages, as well as their friends' activities as part of the social context.

Business profile page: When users click "like" on a business profile page, they are making a connection to that page. The page is then displayed in their profiles where all the friends can see, and that company or brand is able to post content to the users' Newsfeed. A business page includes status update, "suggest to friends" button, photo and web link posting, and a "wall" where users can interact with the company. Using these features, marketers can interact with their customers by replying to their comments, posting coupon codes, promotion links, organizing events, etc. Increasingly more companies are using Facebook Pages as a means to communicate with their consumers, promote new product campaigns, and build brand awareness and reputation.

Theoretical Approach

Emotional Response.

The nature and effects of consumers' emotional response (ER) to advertising has been one of the

major focuses of advertising research in the past two decades (Burke & Edell, 1989; Englis, 1990;

Holbrook & Batra, 1987; Morris, J. D, 1995; Morris, Woo & Chao, 2003). There is ample evidence

that feelings or emotional responses toward advertising have substantial effects on attitude towards

the ads and brand, purchase intentions and behavior (Burke & Edell 1989; Holbrook & Batra 1987;

Morris, Woo, Geason & Kim, 2002; Stayman & Batra 1991). The Advertising Research Foundation

(ARF) copytesting project also found that "emotions can have a direct influence on behavior that is

not captured or summed up by attitude judgments" (Allen, Machleit & Kleine, 1992, p. 500). Batra

and Ray (1986) further argued that ER should be the focus of more advertising research and

supplement cognitive response research that typically examines attitudes towards ads and brand. In

the current paper, ER is used as a predictor of the effectiveness of Facebook advertising.

The consumer ER system that has probably received the greatest attention from consumer

researchers thus far is the PAD theory. Russell and Mehrabian (1977) classified the full spectrum of

human emotion into three independent and bipolar dimensions: pleasure-displeasure, arousal-calm,

and dominance-submissiveness (PAD). Since then, numerous researchers have employed this theory

in studying emotion in the context of consumer behavior (Christ, 1985; Christ & Biggers, 1984;

Morris, Woo & Chao, 2003; Morris et al., 2008). Based on its ability to characterize diverse,

emotional responses and to determine the effectiveness of advertising, the three dimensional

Pleasure-Arousal-Dominance (PAD) approach is used in the current study to measure how college

students feel about Facebook banner ads, Newsfeed ads as well as business pages.

Past research has examined the relationship between cognition and emotional responses (Lazarus

& Smith, 1988; Murry & Dacin, 1996; Schachter & Singer 1962). Studies from this area have

identified the cognitive conditions such as beliefs (Roseman, Spindel & Jose 1990),

involvement/attention (Brown, Homer & Inman, 1998) and personal relevance (Murry & Dacin, 1996)

that give rise to different types of emotions. The current study explores relationships between

emotional responses and cognitive variables including attention paid to the ads, perceived personal

relevance and perceived intrusiveness, as detailed in the following sections.

Personal Relevance.

Personal relevance has been of great interest to Internet advertising researchers (e.g., Rifon, Choi,

Trimble & Li, 2004; Rodgers, 2003). Studies have shown that advertising message relevancy is a key

element for advertising effectiveness (Lee & Mason 1999; Zeng, Huang & Dou, 2009). An ad is

considered relevant when "the receiver is personally affected and thus motivated to respond to the ad"

(Zaichkowsky, 1985, p. 342); moreover, the perceived relevance of any ad should be related to that

receiver's inherent needs, preference and values (Zaichkowsky, 1985). Based on existing literature,

"personal relevance" here refers to situations where the advertised brand is relevant to Facebook users

or where the ad contains elements that are related to them (Smith, MacKenzie, Yang, Buchholz &

Darley, 2007; Thorson & Zhao 1997). For example, listing the number and names of friends who

have "liked" certain brands could create a meaningful link to the user; or the advertisement could

show hiking supply brands to users who have listed "hiking" as their interest, thereby making the

advertised product relevant to them. Because users tend to put personal information on their profiles,

Facebook provides a platform for delivering highly targeted ads to its users. Building on this line of

inquiry, this study also investigates how users' perceived personal relevancy of different Facebook

ads may relate to their responses to the ads.

Attention.

Attention is defined as the amount of cognitive ability to attend to a task (Kahneman, 1973).

Attention plays a critical mediating role in practitioner advertising models such as AICA (Attention

→Interest →Cognition →Action) and AIDA (Attention →Interest →Decision →Action). It has been

positioned as being synonymous with ad effectiveness (Doyle, 1994; Heath, 2007; Kotler, 1999;

Rossiter & Percy, 1998; Pieters & Wedel, 2007). In the same vein, the idea that attention drives

cognitive processing is demonstrated by earlier studies (Lavidge & Steiner, 1962; Schachter &Singer,

1962); however, the relationship between attention and emotional responses has yet to be examined.

Today's consumers do not often pay attention to online advertising, with this phenomenon

growing as more people become Internet-savvy (Creamer, 2008; Pagendarm & Schaumburg, 2006).

However, it has been proven that affect is most effective and goes further when it is processed under

the low attention setting (Bornstein, 1989). Damasio (2000) also provided evidence that emotions are

always formed without the need to pay high attention or activate the working memory. Nevertheless,

studies into the relationship between emotions and attention are mostly in the area of psychology.

Batra and Ray (1983) posited that attention is highly correlated with involvement. The role of, and

interaction between attention and involvement and emotional responses remains a low priority in the

advertising field (Heath, 2007).

Perceived Intrusiveness.

Personal intrusiveness has been a focal issue of SNSs research (Debatin et al., 2009; Lewis et al.,

2008). Intrusiveness is defined as "a psychological reaction to ads that interfere with a consumer's

ongoing cognitive processes" (Li, Edwards & Lee, 2002, p. 39). As people spend more time on SNSs

and disclose more personal information on such spaces, these sites have blended with their life and

become more personalized. Thus the Internet now holds a great amount of personal and private data;

as a highly regarded website for social networking, Facebook has captured much of this information.

Research Questions and Hypotheses

The discussion above demonstrates the substantial research on emotional responses towards

advertising, and highlights the existing work on cognitive attitude towards advertising. The

knowledge gap that the current study aims to fill pertains to the relationship between consumers'

cognitive perceptions and emotional responses in the context of Facebook advertising. Specifically, it

focuses on investigating how perceived relevance, attention, and perceived intrusiveness are related to emotional responses towards Facebook Social Ads. Based on the literature review, six sets of hypotheses are proposed as follows:

Relationship Between Cognitive Factors and Emotional Responses

Rodgers (2003) revealed that relevant Internet ads are more persuasive than those that are irrelevant for ad recall, attitude toward the ads, and purchase intentions. This paper also hypothesizes that subjects' emotional responses towards Facebook Social Ads are positively associate with their perceived relevance of the ads.

H1: Perceived relevance is positively related to emotional responses (pleasure, arousal, and dominance) for all three formats of Facebook Social Ads.

Since the content and elements of Facebook Social Ads are highly related to Facebook users' interests and activities, it is reasonably to predict that people who give higher attention to the social ads would have better emotional responses toward that type of ads.

H2: Attention is positively related to emotional responses (pleasure, arousal, and dominance) for all three formats of Facebook Social Ads.

Aaker and Bruzzone (1985) identified that the perceived intrusiveness leads to a general reduction in advertising effectiveness. Furthermore, intrusiveness often stimulates negative feelings (Edwards, Li & Lee, 2002).

H3: Perceived intrusiveness is negatively related to emotional responses (Pleasure, arousal, and dominance) for all three formats of Facebook Social Ads.

Relationship Between Perceived Relevance and Attention

Muncy and Hunt (1984) pointed out that making connections between an ad message and aspects of one's life is the first step for a receiver to engage in the ad message. These connections are most prevalent when the elements or products in the ad are "personally relevant" (Brunkrant & Sawyer,

1983; Wright, 1973; Zaichkowsky, 1985). According to the limited-capacity model of attention

(Kahneman, 1973; Lee & Faber, 2007; Lang, 2006), although consumers have a limited attention

capacity to process messages, they tend to allocate more cognitive resources to the messages that they

find personally relevant. It is reasonable to propose that users who consider certain ads to be relevant

are more likely to pay attention on that type of ads. Put formally:

> *H4a: Perceived relevance of Facebook banner ad is positively related to attention.*

> *H4b: Perceived relevance of Facebook newsfeed ad is positively related to attention.*

Relationship Between Perceived relevance and Perceived intrusiveness

When faced with ads on Facebook, users may perceive the degree of personal relevance as valuable,

and hence feel less invaded when the perceived relevance of the ads is high. More specifically,

perceived intrusiveness may be lessened for ads that are considered to have high relevance.

> *H5a: Perceived relevance of Facebook banner ad is negatively related to perceived intrusiveness.*

> *H5b: Perceived relevance of Facebook newsfeed ad is negatively related to perceived intrusiveness.*

> *H5c: Perceived relevance of Facebook business pages is negatively related to perceived intrusiveness.*

Relationship Between Perceived Intrusiveness and Attention.

Internet users are often goal-directed and are likely to have negative feelings toward ads when they

consider the ads as interruptions. Consumers tend to avoid the ad if they find it to be intrusive

(Edwards et al., 2002). However, in order to perceive an ad as intrusive and hence avoid it, certain

level of attention from the viewer is required. In spite of the interest in both attention and

intrusiveness of ads, little research has looked at the relationship between perceived intrusiveness and

attention paid to the ads. Therefore, this can be expressed by the following research question:

> *RQ1: What is the relationship between perceived intrusiveness and attention paid to Facebook*
>
> *banner ads?*

> *RQ2: What is the relationship between perceived intrusiveness and attention paid to Facebook*

Newsfeed ads?

Lastly, this study is among the first to examine three different types of Facebook Social Ads; therefore, it is important to examine how the tested variables differ across these formats. Thus, the following research questions are addressed:

RQ3: How does perceived relevance differ among Newsfeed ads, banner ads and business pages?

RQ4: How does attention differ among News feed ads, banner ads and business pages?

RQ5: How does perceived intrusiveness differ among News feed ads, banner ads and business pages?

RQ6: How do emotional response scores differ among News feed ads, banner ads and business pages?

Method

Sampling

Facebook use is prevalent among college students. The adoption rates of Facebook for college students are reported to be between 85-96% (Lampe, Ellison & Steinfield, 2006; Tufekci, 2008). Because the purpose of this study is to provide a picture of college students' perspective on advertising in Facebook, a student sample is appropriate. The data for this study was collected from a convenience sample of college students at a large southeastern US university.

Students were recruited from two undergraduate classes as well as from Facebook invitations. These invitations were sent as Facebook messages to members of student organizations and groups that are affiliated with the university. A purposive sample was justified because this research is only interested in Facebook users. Prospective respondents were screened for student status and for Facebook usage. Only those who were currently enrolled students and had an active Facebook account were surveyed. A total of 320 students completed the survey, with a response rate of 88% for class recruitment and 31% for the Facebook message recruitment.

Measures

A web-based survey was used utilizing a 38-item questionnaire to collect data. The questionnaire has

three major parts: Newsfeed ads, Banner ads, and Business pages. Each part consists of four sets of

questions that assessed: 1) emotional responses to the ads, 2) perceived relevance, 3) attention paid to

the ads, and 4) perceived intrusiveness. Existing scales were used and slightly adapted according to

the particular hypotheses and research questions of the current study.

Perceived relevance of ads was assessed on three seven-point agree-disagree scales (e.g. I find

Facebook banner ads are related to my personal interests/relevant to me/of concern to me) based on

previous studies (Wells, Leavitt & McConville, 1971; Schlinger, 1979). The scores of the scales were

averaged to derive an index score of perceived relevance (*Cronbach's α*= .892).

Perceived intrusiveness (*Cronbach's α* = .888) was also measured using three items on a seven-

point scale (e.g. I find Facebook newsfeed ads are interfering) anchored by "strongly agree/strongly

disagree." The scale is adapted from Edwards, Li, and Lee (2002).

The amount of attention paid to the ads was measured using two items on a seven-point scale (e.g.

I find Facebook banner ads are eye-catching) anchored by "strongly agree" and "strongly disagree".

The scales (*Cronbach's α*= .812) were adopted from the measurement of attention used by Yoo and

Kim (2005). However, attention paid to business pages was measured by asking, "how often do you

visit the business pages on Facebook?"

Subjects' emotional responses were measured by AdSAM®, an attitude self-assessment manikin

that was developed based on the SAM scale. SAM has been used successfully in a number of

previous studies as a well-validated self-report dimensional assessment device (e.g., Bradley & Lang,

1994; Lang, Greenwald, Bradley & Hamm 1993; Morris et al., 2008). It is a visual measure of

emotional response based on the three dimensional PAD (Pleasure, Arousal and Dominance) theory

developed by Osgood, Suci and Tannenbaum (1957) as mentioned in the literature review. It is

suggested that compared to verbal techniques, SAM is a better tool in that it does not require

respondents to cognitively translate their feelings and subconscious thoughts into words (Lang 1985; Morris & Waine 1993; Morris et al., 2008). The correlations between SAM and Mehrabian-Russell's PAD (1977) results were .937 for pleasure, .938 for arousal, and .660 for dominance (Morris, Bradley, Lang & Waine, 1992). This indicates that SAM is a reliable measure for emotional responses. Like its predecessor SAM, the AdSAM measure (see Figure 1) consists of graphic characters arrayed along three continuous nine-point scales: *Pleasure* (how positive/negative the subject feels towards the ads), *Arousal* (how involved in the feeling the subject is) and *Dominance* (how empowered the respondents feel). Participants respond to the prompts "how do you feel about this type of ads?" by rating their emotion along the graphic continuum.

Figure 1: AdSAM
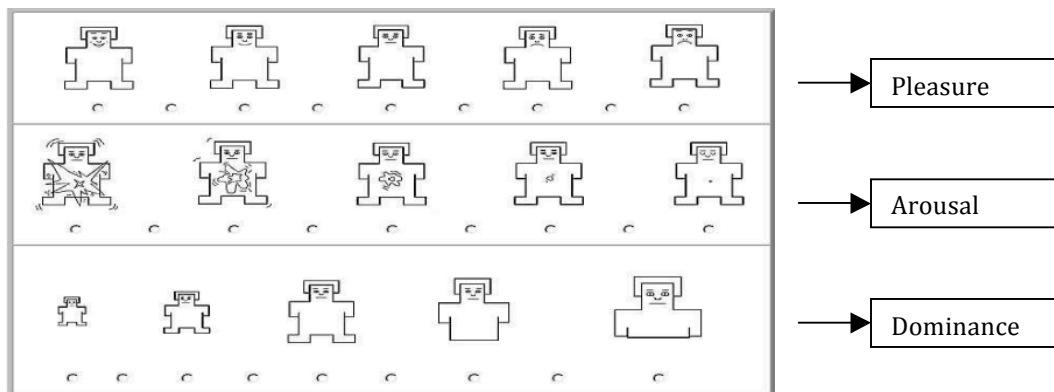
In order to refine the constructs, Cronbach's Alpha (α) coefficient was calculated to determine the internal consistency of the instruments. The results (listed above) demonstrate good reliability for all scales. Further scale refinement was conducted by using exploratory factor analysis separately for three types of social ads. For both banner and newsfeed ads, items loaded on six factors with eigenvalues greater than 1.0. For business pages, EFA provided five factors with eigenvalues greater than 1.0. The percentage of total variance that the identified factors explained varied from 30.3% for banner ads, 36.8% for newsfeed ads and 39.2% for business pages. The item loadings ranged from

.515 to .939. However, a few items had double loadings and were dropped from the analysis.

Additional questions included frequency of Facebook usage and the number of business pages

that one "liked" or interacted with. Specifically, the measure for frequency of Facebook usage was

adopted from Young and Quan-Haase (2009), where it asks participants to report how often they visit

Facebook. The scale ranges from 1 (never) to 8 (every few hours a day). Respondents were also

asked to report the number of Business pages that they "liked." Gender, age, year in school and race

(according to US Census Bureau categories) were measured as demographic characteristics.

<div align="center">**Results**</div>

Descriptive Findings

The survey respondents (N=320) were predominantly female (62.5%). The majority of respondents

classified themselves as Caucasian (55%), with representation from other ethnic groups, such as

Asian (25%), Hispanic or Latino (13%), African American or Black (8%), etc. There was an almost

even divide of undergraduate (50.3%) and graduate participants (49.7%). Respondents' age ranges

from 21 to 60, with the average age of 26.3. Over 80% of participants indicated that they use

Facebook at least once a day. When asked how many business pages they "like" or are a "fan" of,

most participants (67.7%) reported that they had 1 to 20 pages. About 10% of them claimed that there

were more than 50 pages that they "liked." Forty seven percent of the respondents indicated that they

had never interacted with business pages, but the other 53% interacted with business pages that they

liked by commenting on or liking their status (23.4%), clicking on links they posted (26.2) and

writing on their wall (3.4%).

Hypothesis Testing

In order to test the first three hypotheses and examine how perceived relevance, attention, and

perceived intrusiveness are related to respondents' emotional responses towards Facebook Social

Ads, the items within each of the three factors were averaged and then compared to the overall

emotional responses (i.e., pleasure, arousal, dominance) using correlation procedures. The results

indicated that most of hypotheses are supported. Table 1 presents correlations among the variables for

all three types of ads.

Table 1. Summary Statistics and Correlation Matrix

Variables	I.	II.	III.	IV.	V.	VI.
I. Pleasure						
Banner Ads	1					
NewsFeed Ads	1					
Business Pages	1					
II. Arousal						
Banner Ads	.152**	1				
NewsFeed Ads	.288**	1				
Business Pages	.347**	1				
III. Dominance						
Banner Ads	0.052	-0.07	1			
NewsFeed Ads	.235**	0.091	1			
Business Pages	.185**	0.07	1			
IV. Perceived Relevance						
Banner Ads	.268**	.268**	0.016	1		
NewsFeed Ads	.396**	.261**	.180**	1		
Business Pages	.344**	.269**	.217**	1		
V. Attention						
Banner Ads	.161**	.250**	-0.004	.425**	1	
NewsFeed Ads	.323**	.220**	0.065	.592**	1	
VI. Perceived Intrusiveness						
Banner Ads	-. 355**	0.055	- .218**	- 0.1	0.07	1
NewsFeed Ads	- .410**	-0.066	-0.083	- .145**	0.001	1
Business Pages	- .303**	-0.066	-0.083	- .145**	0.001	1

** $p<.01$

For all three types of ads, there was a substantial and positive correlation between perceived

relevance and emotional responses, with one exception for banner ads, where perceived relevance did

not have a significant relationship with dominance ($r = .016$, $p< .01$). The perceived relevance was

positively related to pleasure with Pearson correlation coefficients of $r= .268$** for banner ads,

$r=.396$** for Newsfeed ads, and $r= .344$** for Business pages. It was also positively related to arousal

for banner ads, Newsfeed ads, and business pages ($r = .268$**, $.261$** and $.269$** respectively).

Hypothesis 1 was therefore supported.

For H2, correlational data indicated that attention has a weak but positive relationship with both pleasure ($r = .161^{**}$) and arousal ($r = .250^{**}$) for Facebook banner ads. Similarly, for Newsfeed ads, attention correlated strongly with pleasure ($r=. 323^{**}$) and arousal ($r =. 220^{**}$). However, no significant correlation between attention and dominance was obtained. Hypothesis 2 was also mostly supported.

As hypothesized in H3, perceived intrusiveness had a negative relationship with pleasure for banner ads, Newsfeed ads, and business pages ($r = -. 355^{**}$, $r = - .410^{**}$ and $r = - .303^{**}$ respectively). However, it did not correlate strongly with arousal as shown in Table 1. Only for banner ads, perceived intrusiveness had a significant relationship with dominance ($r = - .218^{**}$, $p< .01$). Hypothesis 3 was only partially supported.

In addition, Fisher's r-to-z transformation was performed to evaluate whether correlation coefficients among the three types of Facebook Social ads were different from one another. Tests of differences in correlation magnitudes between different ad formats produced few significant findings. The only differences found were between Facebook banner ads and Newsfeed ads, where the relationship between perceived relevance and pleasure was more pronounced for newsfeed ads than for banner ads ($z = 1.82$, $p < .05$); similarly, the relationship between attention and pleasure was stronger for newsfeed ads than for banner ads ($z=2.17$, $p< 0.05$).

The results are mostly supported for the set of Hypotheses 4 regarding the relationship between perceived relevance and attention. The perceived relevance of Facebook banner ads was positively related to attention paid to this type of ads with a Pearson correlation coefficient of $r= .425^{**}$ ($p< .01$). The positive linear relationship was statistically significant. Thus, H4a that was related to Facebook banner ads, was supported. In the same vein, result showed that the perceived relevance of Facebook

News feed ads was also positively related to attention paid to this type of ads ($r =. 592^{**}$, p< .01) and

H4b was therefore supported.

The set of Hypotheses 5 regarding the relationship between perceived relevance and perceived

intrusiveness was partially supported. For banner ads, no significant correlation between perceived

relevance and perceived intrusiveness were obtained. H5a was not supported. The results suggest

weak negative associations between the perceived relevance and the perceived intrusiveness with

Pearson correlation coefficient of $r = - .145^{**}$ (p< .01) for News feed ads, and $r = - .156^{**}$ (p< .01) for

business pages, thus, H5b, and H5c were supported.

Research Questions

RQ1 and 2 asked how the perceived intrusiveness relates to attention paid to the ads. A same

correlation procedure was conducted as in the hypothesis testing. There was no significant

relationship found between these two variables (banner ads: $r = .072$; News feed ads: $r =.001$).

RQ 3, 4 and 5 asked how perceived relevance, attention, and perceived intrusiveness differ across

all three Social Ad formats. We conducted a one-way analysis of variance (ANOVA) to compare the

mean score for these variables among Facebook banner ads, News feed ads and business pages. As

Table 2 indicates, means of all variables differed significantly across the three types of Social Ads at

p< .001.

In order to further investigate pair-wise differences among these means, a Tukey's honestly

significant difference (HSD) post hoc analysis was conducted. The perceived relevance for business

pages was significantly higher than for banner ads ($p<.001$), followed by the perceived relevance for

News feed ads ($p <.001$). On the other hand, subjects considered business pages to be less intrusive

than both Newsfeed ads and banner ads ($p <.001$). Attentions paid to News feed ads and banner ads

were compared using a t-test, because the scales used to measure attention paid to Business pages

were different than the scales used for the other two types of ads. T-test results showed that

respondents paid significantly more attention to Newsfeed ads than to banner ads (t=4.82, p <.001).

Table 2. Descriptive Statistics and Comparison of Mean

	Facebook Social Ads Formats						
	Banner Ads		Newsfeed Ads		Business Pages		F
Variables	Mean	SD	Mean	SD	Mean	SD	(df=2)
Perceived Relevance	3.58^a	1.45	3.68^a	1.42	4.35^b	1.39	28.161^{***}
Attention	3.46^a	1.52	3.88^b	1.56	N/A	N/A	12.518^{***}
Perceived Intrusiveness	4.31^a	1.48	4.29^a	1.47	3.33^b	1.44	46.926^{***}
Pleasure	4.21^a	1.61	4.56^b	1.91	5.67^c	1.95	56.933^{***}
Arousal	3.68^a	1.99	4.45^b	1.94	4.69^b	2.03	23.489^{***}
Dominance	4.38^a	2.16	4.89^b	2.03	5.6^c	1.88	28.496^{***}

***p<.001
Means with different subscripts in the same row are significantly different at *p<.001*

To answer RQ 6, the PAD responses to all three types of Facebook Social Ads were also

compared using a one-way ANOVA. The results showed that significant differences exist among

Banner ads, News feed ads, and business pages on all three dimensions. Business pages had a greater

mean score for pleasure compared with both banner ads and News feed ads (p < .001). News feed ads

had higher mean of pleasure than banner ads (p < .05)

Results for arousal dimension did not show a significant difference between News feed ads and

business pages (p = .272). However, Banner ads evoked significantly lower arousal than both

Newsfeed ads and business pages (p < .000). For the dominance dimension, ANOVA results yielded

a significant difference across all three types of ads, where business pages indicated a greater

dominance level than both banner ads and News feed ads (p <. 000); and Newsfeed ads had a higher

mean for dominance than banner ads (p < .01).

Discussion

By examining the effectiveness of three types of Facebook advertising strategies, survey findings

indicated that both personal relevance and perceived intrusiveness significantly affected individuals'

emotional responses. Respondents felt more positive about a particular type of ad when they

perceived it as relevant to themselves, and they had negative feelings toward the ad when they

considered that type of ad to be intrusive. For all three types of Facebook ads, newsfeed ads, banner ads and business pages, both attention and perceived relevance had a positive relationship with pleasure and arousal emotional scores, while perceived intrusiveness had a significant, negative relationship with pleasure. However, significance does not hold between arousal and perceived intrusiveness among three types of ads.

The current study contributes to contemporary consumer research literature by investigating the correlation between cognitive responses and emotional responses. In agreements with previous literature (Rifon, et al., 2004; Rodgers, 2003), this study finds that personal relevance plays an important role in the effectiveness of SNS advertising. While the existing literature mainly focuses on the relationship between relevance and other predictors of advertising effectiveness such as ad recall, perceived ad value, attitudes towards ads, purchase intentions (Lee & Mason 1999; Rodgers, 2003; Zeng, Huang & Dou, 2009), this paper adds to the literature by taking emotional responses into account.

Other than its strong and positive correlation with emotional responses, as hypothesized, perceived relevance had a positive relationship with attention and a negative relationship with perceived intrusiveness. This suggests that when people think the ad is relevant to them, they pay more attention to the ad and are less likely to feel a sense of intrusiveness. This result remains consistent with previous research on the limited-capacity model of attention (Kahneman, 1973; Lee & Faber, 2007; Lang, 2006), which suggests that personal relevance of a message leads to an automatic attention response.

Interestingly, this study found no significant association between perceived intrusiveness and attention. One could argue, however, that individuals must allocate some attention to intrusive ads in order to recognize and avoid them; at the same time, unintrusive ads are likely to garner attention,

because they could be relevant or interesting to viewers.

Comparing all three independent variables with each form of Facebook Social ads, the participants consider business pages more relevant and less intrusive than both News feed ads and banner ads. A plausible explanation is that Facebook users visit business pages and interact with them at their own will. They wouldn't visit or "like" a page unless it is somewhat relevant to them. As a result, users may consider business pages less intrusive because they are not forced to view these pages and therefore feel less interrupted.

It appears that News feed ads draw more attention than banner ads. The reason may be that users have learned to avoid banner ads from regular Internet usage. This phenomenon has become known as "banner blindness" (Cho & Cheon, 2004). Compare with banners, newsfeed ads are relatively new and are mixed with updates from users' friends on the homepage, and consequently they may receive more attention. However, there are no significant differences for perceived relevance and intrusiveness between News feed ads and banner ads.

The differences among the three types of Facebook social ads were significant across all three emotional response dimensions. As reported in Figure 2, business pages showed the most positive responses, the highest arousal and dominance levels. The reason might be that the participants feel that they are in control when deciding whether to visit and "like" a brand page. In line with the above discussion, people may feel better about business pages because they are more relevant and less intrusive. The results of this study also demonstrated that there was a significant difference between banner ads and News feed ads on the overall arousal rating. It indicated that News feed ads evoked higher arousal response among respondents than banner ads did.

In a study of cognitive and emotional responses towards 240 television, radio, and print advertisements, Morris et al. (2002) measured norms for pleasure, arousal, and dominance based on

23,160 observations. However, the mean scores (Pleasure – 6.76; Arousal – 4.95; Dominance – 6.06)

of this study are much higher than Business pages, which received the most positive responses among

the three formats of Facebook ads. The significant difference in performance between ads on

traditional media and on Facebook suggests that no matter how popular the SNS platform is,

Facebook ads in general are less effective than traditional ads (i.e. on TV, radio, print).

Figure 2. AdSAM® Perceptual Map
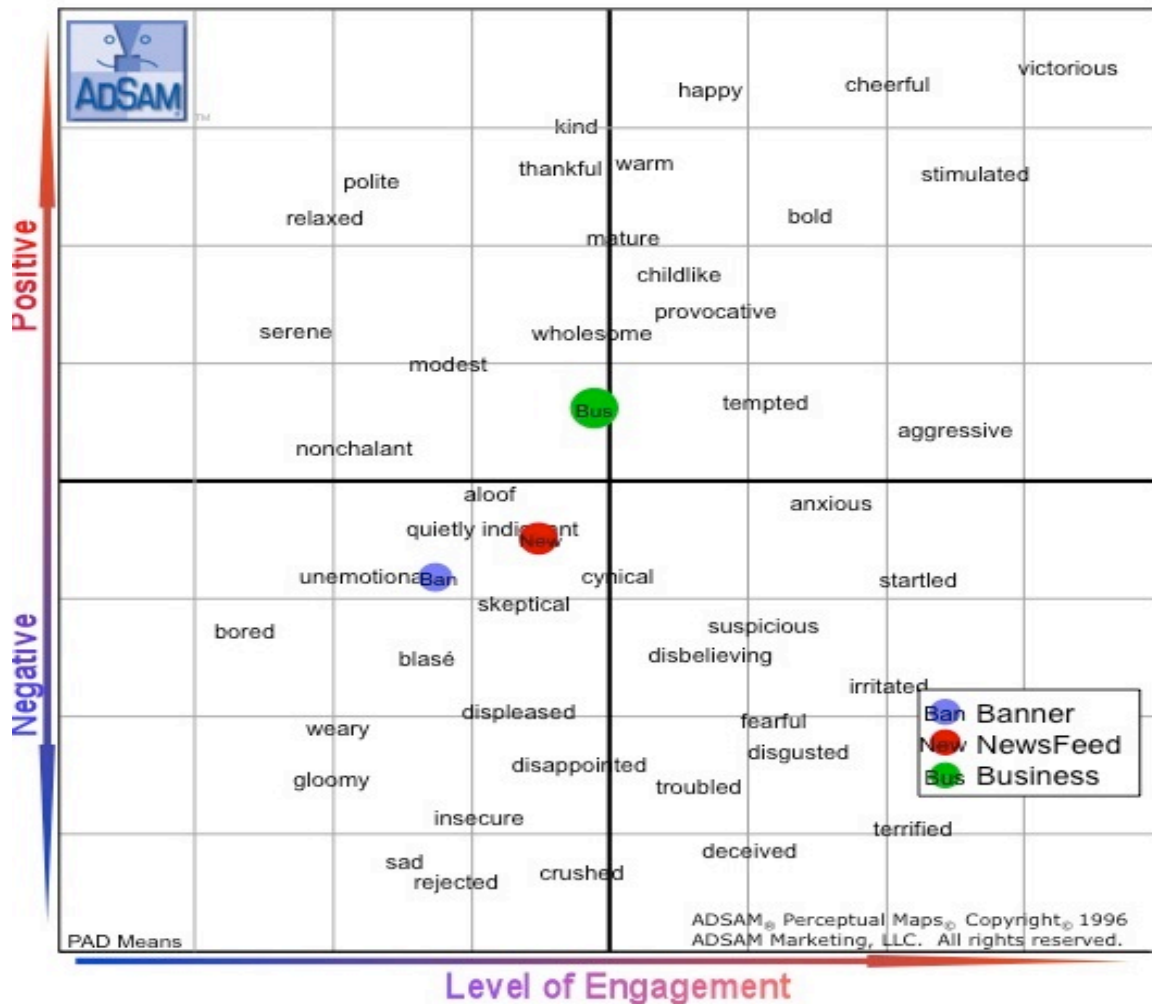
In order to get a better picture of the emotional responses towards banner ads, Newsfeed ads and

business pages, these three types of Facebook Social ads were plotted on the AdSAM® Perceptual

Map© (Figure 2). This map is part of a proprietary system and software, which matches pleasure,

arousal, and dominance scores from the responses to a database of previously tested emotional

adjectives (Morris et al., 2002). These adjectives help describe the feelings that occupy the space near

the three types of Social ads. For example, it shows that participants are between *tempted and modest*

and somewhat *wholesome* towards the business pages. However, they have overall negative feelings

about News feed ads and banner ads, whereas they are *quietly indignant* with News feed ads and

unemotional or *skeptical* with banner ads. These descriptions align with the ANOVA results

discussed above. The adjective matching is accomplished by entering the PAD mean score of each

adjective in the dataset (Morris et al., 2002).

Limitation and Future Research

This study presents several limitations. First, the majority of Facebook users surveyed consisted of

college students, and the choice of student participants seemed appropriate for the study. However,

there's an evolving trend that older generations and professionals are adopting SNS at a fast rate.

Thus, solely relying on a convenience sample of college students may eventually limit the validity of

the findings. Second, the current study only uses a survey to explain users' perceptions of advertising

on Facebook in general. Future studies should systematically replicate the research with other

procedures (e.g., using the emotional responses as a dependent variable under new experimental

treatments). Third, many factors that may influence the effectiveness of Facebook ads are not

included. Additional studies should examine other variables, such as situational factors, attitude

towards the medium, past experience, recall, etc. Furthermore, the current study only looked at

advertising in one SNS – Facebook. In order to gain a broader picture of this medium, future research

should expand to other SNSs, and include a diversity of social advertisements.

Conclusion and Managerial Implications

The current study investigated users' emotional responses toward Facebook advertising, as well as

relationships among emotional responses, perceived relevance, attention, and perceived intrusiveness.

The present findings have implications for both researchers and practitioners. Overall this study

expands the literature on Facebook Social Advertising effectiveness by examining relevant variables in a systematic manner. It also provides a foundation for the future research of various types of advertising formats on SNSs. Practitioners may use the findings to design social networking advertising campaigns that help create positive feelings and avoid negative effects.

As indicated by the empirical evidence, personal relevance plays an important role in the effectiveness of SNS advertising. This suggests that marketers should make the advertising content more relevant to users. Compared to traditional advertising, Facebook Social Ads are more related to users' interests, personal preferences, and social connections. However, other factors such as perceived intrusiveness may have a negative influence on the effectiveness of social ads. For instance, newsfeed ads appear on the Facebook home page either as updates from a business page that you have "liked," or as sponsored stories showing that one of your friends has "liked" a brand or company. One would assume News feed ads are highly relevant to users because they engage the social context of the user viewing the advertisement. However, participants have a negative feeling towards this type of ad. A possible explanation is that no matter how relevant the contents are, Newsfeed ads are mixed with other information from users' friends and appear on the home page without one's permission, as a result, users feel they are interrupted and their space was invaded.

The study further confirms the central role of Facebook in contemporary American college students' lives. Most respondents indicated that they use Facebook more than once a day. Advertisers need to acknowledge that SNSs are not a fad, but an important vehicle for brand building and maintaining consumer relations. Among the three types of Facebook Social Ads, business pages appear to be the only ones that generated positive feelings among the participants. Including the message "Find us on Facebook" in traditional advertisements such as TV commercials and print ads could be an effective strategy for companies that plan on utilizing SNSs as a marketing tool. Small

and new businesses could also make their entry into the world of social media by promoting their

Facebook pages and encouraging potential customers to visit and "like" them.

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