The Effects of Moods Induced by Webpage Content on the Effectiveness of Display Ads

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Abstract

This study investigates the influence of customers' mood states, as elicited by webpage content, on the effectiveness of online display ads. A laboratory experiment is conducted and the results show that customers in positive moods induced by webpage content will have better recall, attitude, purchase intentions, and will be more likely to click on display ads, compared to those in negative moods. These effects are also moderated by advertisement type, product type, attention level, and product involvement. Based on these findings, this study offers guidelines for Internet advertisers and advertising service providers.

Keywords: Internet advertising, contextual advertising, mood, affect infusion model, display ads

網頁內容引發之情感對展示型廣告效果的影響

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摘要

本研究探討網頁內容所引發的消費者情感對線上展示型廣告效果的影響。經由實驗室實驗法，本研究發現當網頁內容引發消費者正向情感時，會比負向情感的消費者有較佳的廣告回想、廣告態度、購買意圖和廣告點擊率。同時，廣告類型、產品類型、廣告注意程度、產品涉入程度具有調節的作用。根據研究的發現，我們提供線上廣告服務提供者與廣告主實務上的建議。

關鍵詞：網路廣告、內容關聯廣告、心情、情感注入模式、展示型廣告

1. Introduction

According to Interactive Advertising Bureau (IAB), online advertising revenues continue to increase at a high rate (about 17 percent every year). How to effectively deliver online ads is a critical issue in the Internet era. Consumers' mood states are typically considered an important factor affecting advertisement effectiveness (Gardner, 1985), and have been widely studied in the context of traditional media; however, the influence of webpage readers' mood states on the effectiveness of online advertising has not been examined adequately, and to the best of our knowledge, very little empirical research on this issue exists. Since the World Wide Web is an important medium for advertising and customers may have different responses to advertisements conveyed through different media (Lin and Chen, 2009), exploring the role of mood states induced by webpage content in Internet advertising is critical.

Marketing communications, e.g., advertising, may affect consumer responses by inducing mood states from the *context* in which the communication appears (Gardner, 1985). For instance, music in a physical store or programs on TV can induce consumers' mood states and further affect their responses to ads in the context. According to eMarketer, an independent market research company, search and display ads are the most popular ad formats, making up roughly 90% of online ad spending share (Fredricksen, 2012). While search ads are placed on the results pages of search engines to match the key search terms entered by users, display ads are placed on webpages that include more actual content and are more likely to induce mood states. The present study focuses on the effect of mood states induced by webpage content on the effectiveness of online display ads. Consumers may generate positive, negative or neutral moods when they read the content of a webpage (the context of display ads). The induced moods may influence customers' evaluations of embedded display ads.

Existing Internet advertising services such as Google AdWords and Yahoo! Search Marketing have not considered the effect of content-induced mood states (Deane and Pathak, 2009; Geddes, 2012). In order to deliver effective display ads, the interaction effects among mood states, ad types, product types, product involvement and attention levels must be understood. The relevance of a target stimulus to the recipient and the attention level paid to the stimulus influence how the recipient processes the information content of the stimulus and how moods infuse this process (Cacioppo et al., 1986; Forgas, 1995). In addition, the type of ad (emotional vs. informational) and the type of advertised

product (hedonic vs. utilitarian) may moderate the mood effects. Affects would be more important than judgements in explaining attitude toward ads when consumers face emotional ads or hedonic products (Ding and Lin, 2012; Edell and Burke, 1987). Existing studies have not systematically investigated the interaction effects among these factors. The present study fills this gap with the aim of helping advertising service providers deliver more effective online ads. We conducted a laboratory experiment to examine the effects that this paper describes. By understanding these effects, Internet advertising service providers can improve their services by analysing the mood states elicited by webpage content and consumers' product involvement and can ensure the presentation of suitable advertisement types and product types online.

We expect that delivering online ads according to mood states induced by webpage content will allow for improved advertising effectiveness. Contextual advertising handles the task of how to place ads in webpages based on the webpage content. This study contributes to advertising research by offering a conceptual model that explains the effects of mood states induced by webpage content on the effectiveness of display ads and by providing guidelines to improve contextual advertising.

2. Theoretical Background and Hypothesis Development

2.1　The Effects of Mood States on Recall

The results of past studies are consistent in finding that customers in positive mood states recall more information about advertisements than do those in negative mood states. Goldberg and Gorn (1987) investigated how happy and sad TV programs affect reactions to commercials and found that recall was superior under the program-induced positive mood relative to program-induced negative mood. Mathur and Chattopadhyay (1991) reported that viewers in a positive mood induced by a happy TV program recall more of the advertisement compared to viewers in a negative mood induced by a sad TV program. Hadjimarcou and Marks (1994) used magazine stories to manipulate readers' mood states and found the similar phenomenon. The subjects in a positive context-induced mood recalled significantly more positive information than those in a negative context-induced mood.

One possible reason for this phenomenon is that people in positive moods tend to see relatedness and interconnections among cognitions and are able to create wider and more

integrated knowledge structures, which permit more efficient processing of information (Isen and Daubman, 1984). Another reason is that people become more engrossed with the cause of their negative mood and thus allocate more attentional resources to the context (the cause of the mood) and less to the advertisement (Clark and Isen, 1982). In contrast, people in a positive mood are more receptive to the advertisement. Therefore, this study proposes the hypothesis:

H1*: Consumers in positive mood states induced by webpage content have better recall of display ads than do those in negative mood states.*

2.2 The Effects of Mood States on Attitude

Gardner and Wilhelm (1987) used written stories to induce mood and found that consumers in positive moods have more positive attitudes toward advertised brands. Goldberg and Gorn (1987) induced customer moods by showing them television programs followed by advertisements. Their results showed that customers in positive moods made more positive comments about both the programs and the advertisements, while those in negative moods made more negative comments about both. Kamins et al. (1991) found that consumers have better attitudes toward advertisements when their moods, as induced by television program, are consistent with the advertisements in question. Although past studies on TV commercials have not obtained uniform results, studies in general indicate that customers in positive moods have better attitudes toward advertisements.

In the Web environment, some studies (Cheng et al., 2009; Kim et al., 2009; Park et al., 2008a) found that website atmospherics, such as product presentation, background music and colour, can influence consumers' feeling states and affect cognitive and conative responses. They noted that people who feel more pleasure have more positive attitudes towards websites. Tung et al. (2006) also found that more positive moods elicited by a web experience correspond with more positive attitudes toward the website as ad.

This study focuses on product attitude rather than ad attitude, because ad attitude is a function of attitude toward ad formats (Burns and Lutz, 2006). Web advertisements come in various formats, such as banner ads, pop-up ads, and skyscraper ads; thus, to eliminate the effect of user preference of ad format, we measure users' attitudes toward advertised products in this study. According to affect infusion model (AIM), being in a good mood should lead judges to pay closer attention to positive information and details and interpret ambiguous information more positively (Forgas, 1995). Social psychological studies

show that robust patterns of mood-congruent effects are involved in many kinds of social judgments. Therefore, the following hypothesis is proposed:

H2: *Consumers in positive mood states induced by webpage content have better attitudes toward advertised products than do those in negative mood states.*

2.3　The Effects of Mood States on Purchase Intention

Kamins et al. (1991) provided evidence of a mood consistency effect, under which consumers' purchase intentions with regard to sad advertisements are higher after they view a sad TV program. Consumers' purchase intentions with regard to positive ads are only slightly higher when they are in positive moods, however. Alpert and Alpert (1989) used background music in commercials to induce feelings toward products, and found that viewers in sad mood states had greater intentions to purchase a greeting card than those in happy mood states. This mood incongruent effect occurs if customers in negative moods are motivated to improve their mood states (Hadjimarcou and Marks, 1994). Additionally, mood congruent effect was also found. Spies et al. (1997) used store atmospheres to manipulate customers' mood states and found that customers in positive moods were more willing to purchase items than those in negative moods.

AIM suggests that customers' behaviours are congruent to their mood states when their processing does not involve familiarity and is not goal-directed. AIM provides an explanation for mood-congruent and mood-incongruent directions, suggesting that, in general, customers' judgments are influenced by affects to be congruent to the mood states. However, when customers directly access pre-existing evaluations or process in service of a pre-existing goal, the judgmental outcomes are not influenced by or incongruent with the prevailing affective state. Therefore, when customers use direct access or motivated processing strategies, affects are unlikely to be infused in a mood-congruent direction (Forgas, 1995).

In most cases, customers' judgments of display ads are not governed by well-established habits, routines, or performance programs, meaning that customers are not motivated to arrive at particular decisions or engage in certain behaviours and are unlikely to use direct access and motivated processing strategies. The nature of advertisements is to deliver persuasive messages to customers to improve their evaluations of advertised products, services, or brands. These persuasive messages can be relevant to product features, advantages, and benefits (i.e., informational advertisements), in which case

customers need to apply more effort and product knowledge to process them. Other persuasive messages have nothing to do with product attributes and can make customers comply by making use of peripheral cues (i.e., emotional advertisements) (Huang et al., 2006). Substantive and heuristic processing strategies are used to deal with these two types of advertisement messages in which affect infusion occurs. Some studies (Hsu and Tsou, 2011; Jiang et al., 2010; Kim, et al., 2009; Park et al., 2008a) have found that consumers' positive and negative feeling states associated with a web store result in favourable and unfavourable purchase intentions. We posit that such mood congruent effects occur and thus hypothesize that:

H3*: Consumers in positive mood states induced by webpage content will have greater purchase intentions when viewing a display ad than will those in negative mood states.*

2.4   The Effects of Mood States on Click-Through Rate

Click-through rates are a measure of online advertisement effectiveness. Unlike traditional advertisements, Internet advertisements allow users to click on them and direct them to the landing pages, where they can obtain more information about the advertised products and brands. Some studies investigated the factors influencing ad clicking (Cho, 2003; Wang and Sun, 2010). No existing studies have considered the effect of mood states on ad-clicking behaviour.

Verhagen and van Dolen (2011) found that online environments that create positive affects encourage certain browsing behaviours. Ad-click behaviour can be treated as a browsing behaviour aimed at exploring more information and can also be compared to impulse behaviour. Piron (1991) comprehensively defined impulse behaviour as that which is unplanned, is the result of an exposure to a stimulus, and is decided on the spot. Similarly, clicking on ads is unplanned prior to visiting a website and can be made in response to exposure to ads, recommendations, reminders, or environmental manipulations. Click decisions are made upon seeing the ad or a stimulus related to the ad. Some studies have found that positive affect is positively related to the urge to buy impulsively on online stores and that negative affect is negatively related to this urge (Parboteeah et al., 2009; Verhagen and van Dolen, 2011). Given this, we hypothesize that:

H4*: Consumers in positive mood states induced by webpage content are more likely to click on a display ad than are those in negative mood states.*

2.5 Moderating Effects

Past studies (Gardner and Hill, 1988; Goldberg and Gorn, 1987) have shown that ad effectiveness can differ by ad type, even when customers are in the same mood state. Most researchers distinguish between emotional and informational advertisement types. Goldberg and Gorn (1987) found that emotional advertisements are more effective when customers are in positive mood states and that informational advertisements are more effective when customers are in negative mood states. Moreover, Dens and Pelsmacker (2010) found that print ads using informational appeals work especially well in situations of high product involvement, whereas ads using positive emotional appeals perform better in situations of low product involvement. For banner ads, Wang et al. (2009) found that product involvement had a significant impact on attitude under informative appeal, but not under emotional appeal. Involvement refers to a person's perceptions of the relevance of a focal object based on inherent needs, values, and interests (Zaichkowsky, 1994). Depending on their level of involvement, consumers may be passive or active when they receive advertising communications and may limit or extend their processing of this communication (Laurent and Kapferer, 1985). Thus, we hypothesize that:

H5: *Mood states induced by webpage content, ad type, and product involvement have an interaction effect on the effectiveness of display ads. Particularly, the ad will have better effectiveness when it is emotional for low-involvement products and consumers are in positive mood states.*

Product types are often described as being either utilitarian or hedonic (Dhar and Wertenbroch, 2000; Geuens et al., 2011; Kempf, 1999). Hedonic products lead to experiential consumption and provide affective or sensory gratification, while utilitarian products are instrumental and functional and provide cognitively oriented benefits (Dhar and Wertenbroch, 2000; Kempf, 1999). Researchers have found that consumers have more emotional responses toward hedonic products and cognitive responses toward utilitarian products (Kempf, 1999).

Adaval (2001) reported that when people receive information about a product and consider utilitarian criteria to be the most relevant to an evaluation, they construe the implications of the information without considering their affective reactions to it. In contrast, when people consider hedonic criteria to be the most relevant, they are likely to assess their affective reactions to individual pieces of information. Ding and Lin (2012) examined the impact of website background music tempo, as an emotional stimulus, on

consumer attitudes in online shopping. They found that when music tempos induce higher arousal and pleasure purchase intention for hedonic products can be enhanced but not for utilitarian products. These findings imply that mood states have a higher impact on the evaluation of information on hedonic products than on utilitarian products. Moreover, Swinyard (1993) found that the effects of mood on purchase intentions will be greater in more involving shopping situations than in less involving shopping situations because involved shoppers are more likely to associate their mood state with a target stimulus. Thus, we can infer that consumers' mood states, their involvement with the advertised product and the type of the advertised product may have an interaction effect on ad effectiveness. Positive mood states probably result in better ad effectiveness when the advertised product is hedonic and relevant. The following hypothesis is proposed:

H6: *Mood states induced by webpage content, product type, and product involvement have an interaction effect on the effectiveness of display ads. Particularly, the ad will have better effectiveness when it advertises a hedonic and high-involvement product and consumers are in positive mood states.*

A survey by Adweek Media/Harris Poll showed that 63 percent of consumers tend to ignore or disregard all Internet ads, which is far more than those who disregard traditional media ads (Friedman, 2010). Internet users have more control over selecting what they want to see, making it difficult for web ads to catch their attention (Nagar, 2009). Whether or not a recipient pays sufficient attention to target information determines his/her ability to process the information (Cacioppo et al., 1986). Advertisements usually deliver information on the benefits and advantages of the advertised product or service. If consumers pay sufficient attention to a display ad they have ability to think about the merits of the ad content and therefore a more positive attitude can be elicited.

AIM suggests that people with low levels of involvement tend to use heuristic processing strategies, while those with high levels of involvement tend to adopt substantive strategies (Forgas, 1995). Tasks that adopt substantive processing are most likely to be influenced by affect, as mood will selectively prime affect-related thoughts and memories to be used when constructing a response. The affect-as-information mechanism is more likely to be employed in heuristic processing strategies, by which judges use their affective states as shortcuts to infer judgments and thus some affect infusion occurs. We can infer that context-induced positive moods have a stronger positive impact on ad effectiveness when the advertised product is highly relevant to the consumer. Additionally, if consumers

pay more attention to the ad they are able to recognize the merits of the ad information, which results in better ad effectiveness. Thus, we hypothesize that:

H7*: Mood states induced by webpage content, attention level, and product involvement have an interaction effect on the effectiveness of display ads. Particularly, the ad will have better effectiveness when it advertises a high-involvement product, consumers pay high levels of attention to the ad and are in positive mood states.*

3. Research Methodology

The experimental design of this study involves a factorial design, in which context-induced mood state (positive vs. negative) is the main factor affecting ad effectiveness, which includes recall of advertisements, attitudes toward advertised products, purchase intention, and number of clicks. In this study, ad types (informational vs. emotional), product types (hedonic vs. utilitarian), and levels of attention paid to advertisements (high vs. low), and product involvement (high vs. low) are considered factors moderating the influence of context-induced mood states on ad effectiveness. Figure 1 presents the research framework for this study.
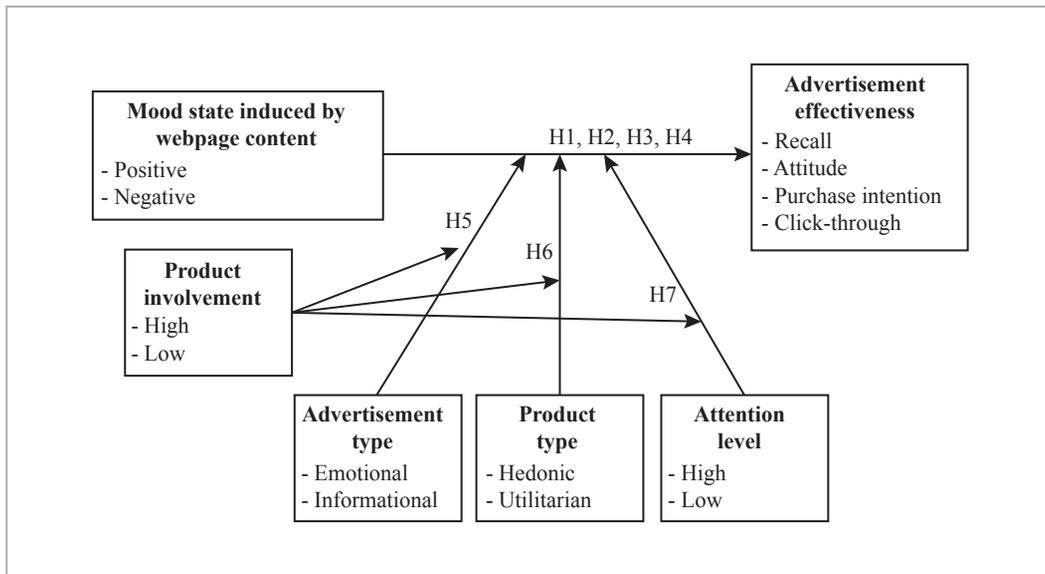
▲ Figure 1　Research framework

3.1 Control Variables

Advertisement formats have different effects on attitudes toward advertisements (Burns and Lutz, 2006). The design and length of advertisements influence ad effectiveness (Lin and Chen, 2009; Park et al., 2008b). With this in mind, we used text-based advertisements of a similar length (76-84 words) attached to an image in banner ads to maintain consistency and we employed ad content that was either informational or emotional. We also placed banner ads at the bottom of webpages. Keeping in mind that argument quality impacts persuasiveness and that stronger arguments are more effective in changing attitudes than are weaker arguments (Park et al., 2007), we controlled the argument quality of the advertisements used. Additionally, the mood states induced by ads were also controlled in the experiment.

3.2 Pretest

Watson et al. (1988) developed two mood scales that comprise the Positive and Negative Affect Schedule (PANAS). They identify ten terms for positive mood scale and ten terms for negative mood scale. This study adopts PANAS scales to measure subjects' mood states, because these scales were developed from the mood perspective. Since the subjects' native language was Chinese, this experiment adopted the Chinese-version PANAS scales (Teng and Chang, 2006), which have strong reliability and validity. Articles with the highest votes in terms of emoticons, except those discussing political news, were selected from United Daily News (udn.com). Two articles, one inducing a positive mood and the other inducing a negative mood, were read by thirty-one subjects. Fifteen subjects read the positive news and sixteen subjects read the negative news, following which the PANAS scales were used to measure their mood states. The mood states induced by the articles significantly differed ($t = 4.196$, $p < 0.001$, for positive news; $t = -3.511$, $p < 0.01$, for negative news). Based on measuring the responses of the subjects, the Cronbach's alpha value for the PANAS scales was 0.893, indicating that the scales have good reliability. The result of factor analysis shows that the PANAS scales have a two-factor structure, including positive and negative moods, and that its construct validity holds.

Four products with fictitious product brands were tested, including printer, vacation, electronic dictionary and camera. They were took into consideration because their prices were similar, around NT$10,000, and were affordable to students. Another reason was that there were many vendors for these product categories and thus an unknown brand was not unusual. These products were tested by 34 subjects, using utilitarian and hedonic

dimensional scales adopted from Batra and Ahtola (1991). The results showed that the printer had the largest utilitarian mean value and significantly higher than its hedonic value ($t = 7.63$, $p < 0.001$); the vacation had the largest hedonic mean value and significantly higher than its utilitarian value ($t = -2.27$, $p < 0.05$). We chose the printer and the vacation as the experimental stimuli.

Two advertisements were designed, one of which was informational and one of which was emotional, for each product type. The ads were tested by 30 subjects, and were rated on advertisement type and argument strength. Scales were adopted from (Cheung et al., 2009; Goldberg and Gorn, 1987). Both types of advertisements for the utilitarian and hedonic products were significantly different on the informational-emotional dimension ($t = -8.021$, $p < 0.01$; $t = -5.427$, $p < 0.01$, respectively). The argument strength of the four ads was not found to differ (F = 1.054, $p > 0.05$). Other 33 subjects were invited and randomly assigned to read one of the four ads. After that, their mood states were measured by the PANAS scales. The result showed that their mood states induced by the ads did not differ (F = 0.1, p > 0.05, for positive moods; F = 0.411, p > 0.05, for negative moods).

3.3　Procedure and Measures

A website was created for the experiment. A total of 247 subjects completed the experiment in a computer room. The subjects were university students aged 19 to 25, 89 of whom were male, and 158 of whom were female. The subjects first read a webpage about the purpose of the study and were given instructions on how to go through with the experiment. They were then directed to browse a webpage containing one of the two articles, which appeared with equal probability, to elicit their mood states. The webpage also randomly displayed one of the designed advertisements at the bottom of the article. This randomization prevented the influence of individual differences and initial mood states. Finally, subjects were asked to fill out a questionnaire.

This questionnaire adopted the seven-point scales from a previous study (Batra and Ahtola, 1991) to measure attitudes toward the advertised products. It also measured whether the subjects intended to purchase products by using the seven-point scales from a previous study (Hadjimarcou and Marks, 1994). Five multiple-choice questions about the ad content were provided to measure the subjects' recall. We use the Java programing language, particularly, JavaServer Pages (JSP) to develop the experimental website. A session id was automatically generated for each participant when s/he logged onto the website. Once the participant clicked the ad the software program increased a counter for

the session id. Finally, the value of the counter (the number of clicks on ads) was stored into a database. We adopted a seven-point scale, ranging from "high level of attention" to "low level of attention" to measure attention levels and used a modified version of the personal involvement inventory scale (Mittal, 1995) to measure product involvement. This study tested the proposed hypotheses by using ANOVA.

4. Experimental Results

4.1   Effects of Mood States Induced by Webpage Content

In this study, no significant difference was found in the amount of information recalled by subjects in positive and negative mood states (F = 0.0002, $p = 0.989$). As such, *H1* was not supported. The results showed that the subjects' mood states, as elicited by webpage content, had a significant influence on their attitudes. The subjects in positive mood states had better attitudes toward the advertised products than did those in negative mood states (F = 31.475, $p < 0.001$). *H2* was thus supported. The subjects in positive mood states induced by webpage content had slightly higher purchase intentions than did those in negative mood states (F = 3.327, $p < 0.1$). Therefore, *H3* was marginally supported. Since the most participants did not click the ad and thus the data distribution was skewed we used Kruskal-Wallis H Test instead of ANOVA to compare the variable. The result shows that the subjects in positive mood states induced by webpage content were more likely to click on the banner ads (chi^2 = 4.943, $p < 0.05$), and so *H4* was supported.

4.2   Moderating Effects

The results of the three-way ANOVA (see Table 1) show that mood states, advertisement types, and product involvement have interaction effects on attitude (F = 4.215, $p < 0.05$). When positive mood states were elicited in subjects, the subjects had better attitudes toward informational ads for high-involvement products and emotional ads for low-involvement products. On the other hand, when the subjects were in negative mood states, they had better attitudes toward emotional ads for high-involvement products and informational ads for low-involvement products. Thus, the interaction effect on attitude is significant. Nevertheless, the interaction effects on recall and purchase intention were not significant, so *H5* was partially supported.

▼ Table 1　Effects of mood state, ad type, and product involvement on attitude								
Mood state	Positive				Negative			
Ad type	Emotional		Informational		Emotional		Informational	
Involvement	Low	High	Low	High	Low	High	Low	High
Attitude [M. (SD.)]	5.248 (0.254)	4.667 (0.335)	4.375 (0.272)	5.095 (0.257)	4.010 (0.240)	4.052 (0.285)	4.154 (0.244)	3.928 (0.261)
F = 4.215, p = 0.041, Sum of squares = 7.494								

Mood states, product types, and product involvement were found to have interaction effects on purchase intention (F = 7.727, p < 0.01). Table 2 shows that if subjects were in positive mood states, they had greater intentions to purchase high-involvement hedonic products, or low-involvement utilitarian products. On the other hand, if subjects were in negative mood states, they had greater intentions to purchase high-involvement utilitarian products, or low-involvement hedonic products. The interaction effects on recall and attitude were not significant. As such, H6 was partially supported.

▼ Table 2　Effects of mood state, product type, and product involvement on purchase intention								
Mood state	Positive				Negative			
Product type	Utilitarian		Hedonic		Utilitarian		Hedonic	
Involvement	Low	High	Low	High	Low	High	Low	High
Purchase intention [M. (SD.)]	3.570 (0.224)	3.454 (0.352)	3.350 (0.299)	4.351 (0.236)	3.069 (0.240)	3.765 (0.279)	3.746 (0.245)	3.428 (0.270)
F = 7.727, p = 0.006, Sum of squares = 13.835								

Mood states, attention levels, and product involvement were found to have interaction effects on purchase intention (F = 5.350, p < 0.05). Table 3 shows that subjects in positive mood states had greater intentions to purchase high-involvement products when they paid high levels of attention to banner ads, or to purchase low-involvement products when they paid low levels of attention to banner ads. In contrast, subjects in negative mood states had greater intentions to purchase high-involvement products when they paid low levels of attention to banner ads, or to purchase low-involvement products when they paid high levels of attention to banner ads. H7 was thus partially supported.

▼ Table 3   Effects of mood state, attention level, and product involvement on purchase intention

Mood state	Positive				Negative			
Attention level	Low		High		Low		High	
Involvement	Low	High	Low	High	Low	High	Low	High
Purchase intention [M. (SD.)]	3.660 (0.225)	3.684 (0.269)	2.991 (0.359)	4.388 (0.275)	3.245 (0.200)	3.613 (0.281)	4.246 (0.392)	3.563 (0.298)
F = 5.350, p = 0.022, Sum of squares = 9.627								

4.3 Other Findings

We found that the subjects recalled more information (F $= 30.717$, $p < 0.001$), had better attitudes toward advertised products (F $= 5.571$, $p < 0.05$), and were more likely to click on ads (chi^2 $= 6.716$, $p < 0.01$) if they paid high levels of attention to the ads. Interaction effects were found with moods induced by webpage content, advertisement type, and attention level (F $= 5.136$, $p < 0.05$). When the subjects had positive moods induced by webpage content and paid higher levels of attention to the ads, they recalled more about emotional ads than about informational ones, whereas when they had negative moods induced by webpage content, they had better recall of informational ads than of emotional ones.

5. Discussion

H1 was not supported, meaning that mood states induced by webpage content do not directly affect ad recall. One possible reason for this could be that ad recall is determined by the levels of attention paid to an ad and most Web users pay little attention to banner ads. If we only consider subjects who paid high levels of attention to ads, we find that subjects in positive mood states recall more about emotional ads, while subjects in negative mood states recall more about informational ads. People in positive moods recall a greater percentage of pleasant incidents, whereas people in negative moods recall a lower percentage of pleasant incidents (Bower, 1981). The emotional ads designed for this experiment intended to produce positive emotions and therefore subjects in positive moods recalled more about them while those in negative moods recalled less. In contrast, people in negative moods tend to carefully consider benefit information (Gardner and Hill, 1988). Accordingly, the subjects in negative mood states recalled more about informational ads.

Consumers have better attitudes toward informational ads for high-involvement

products when they are in positive mood states and better attitudes toward emotional ads when they are in negative mood states. Better attitudes toward low-involvement products are elicited by emotional ads when consumers are in positive mood states and by informational ads when they are in negative mood states. High-involvement products are products that consumers perceive to be important and relevant. If the product is relevant to customers, they are expected to use central routes to process ad messages, which is why informational ads are considered to be more persuasive than emotional ads in such cases (Huang, et al., 2006; Petty et al., 1983). We found that this was true when positive moods were induced in subjects, but not when negative moods were induced. One possible reason for this finding could be that if products were relevant to subjects in negative moods, positive emotional ads might evoke the thought that the products involved have the additional benefits of remedying their negative moods, leading to better attitudes toward the products. The subjects still adopted central routes to process emotional ad messages. In cases in which a product is irrelevant to customers, they tend to use a peripheral route to process ad messages and mood states become peripheral cues and have more interaction effects with ad types. Emotional ads are thus more persuasive when positive moods are induced in subjects, and informational ads are more persuasive when negative moods are induced (Goldberg and Gorn, 1987).

In general, consumers tend to purchase high-involvement products. However, this study found that context-induced negative moods decrease subjects' intentions to purchase high-involvement products if they pay high levels of attention to banner ads. Swinyard (1993) notes that negative moods result in lower purchase intentions in more involved shopping situations than in less involved shopping situations. As such, banner ads for products that are of low relevance to consumers are more suitable to webpages inducing negative moods.

6. Conclusion

6.1　Theoretical Implications

This study found that consumers' mood states, as induced by webpage content, influence the effectiveness of display ads embedded in webpages. Advertisements were found to be more effective in terms of customer attitude, purchase intention, and clicks when they are placed on webpages inducing positive mood states. The study results are

consistent with AIM. If affect infusion occurs, people' judgments are influenced by affects to be congruent to the mood states. However, ad effectiveness differs when other factors are incorporated into mood states. Prior studies have examined the interaction effects of moods and ad types (Gardner and Hill, 1988; Goldberg and Gorn, 1987), moods and product types (Ding and Lin, 2012), moods and involvement (Swinyard, 1993). Existing studies have not systematically investigated the interaction effects of all these factors. The present study examined the interaction effects among mood states, ad types, product types, product involvement and attention levels. We found that ad effectiveness can be enhanced by delivering suitable types of ads and advertised products based on consumers' mood states elicited by webpage content, product involvement and attention levels paid to the ad. Placing display ads on webpages that induce negative moods is not always a bad idea. Another interesting finding is that context-induced negative moods increase consumers' intentions to purchase low-involvement products if they pay high levels of attention to the ads.
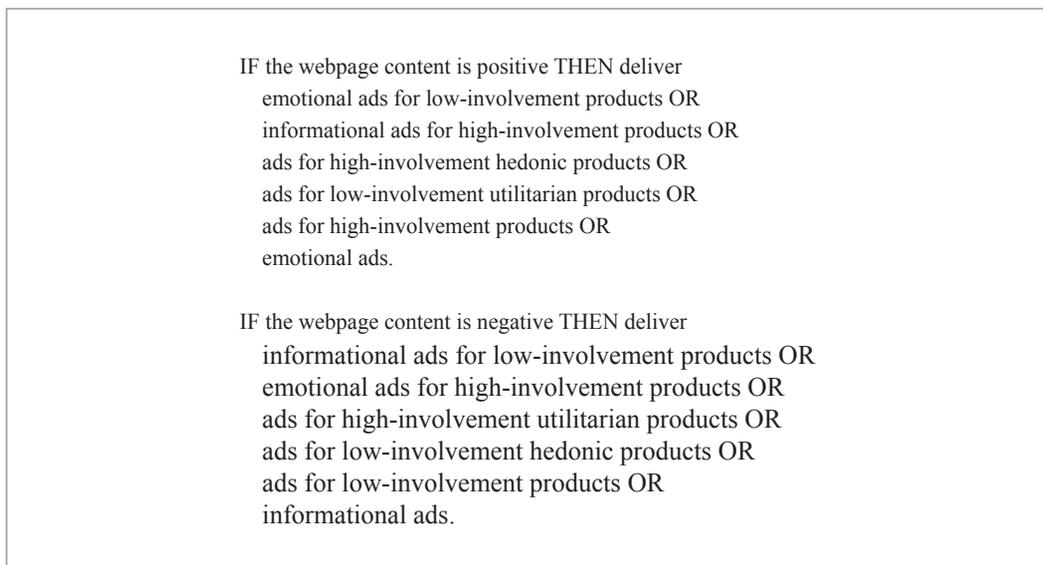
Prior studies on Internet contextual advertising focused mainly on theme congruence between webpage content and display ads. Choi and Rifon (2002) reported that greater relevance of the advertised product category to the website content theme leads to a more positive brand attitude. Similarly, Moore et al. (2005) found that if the advertiser and the website focus on a similar product category, consumers will have a more positive ad attitude. Chun and Song (2014) showed that the theme congruence can enhance brand recognition and ad attitude particularly when a banner ad has low complexity. In contrast, the present study focuses on the effects of webpage content generated mood states. The research findings contribute to the knowledge base of contextual advertising.

6.2 Practical Implications

Geddes (2012) described how Google AdWords matches display ads with webpages in its display network. First, Google scans a page and assigns a theme to that page. Next, Google scans the advertiser's ad group (a collection of closely related keywords) and assigns a theme for that ad group based on the keywords chosen by the advertiser. Finally, Google places the display ad on a page when the webpage content and the advertiser's ad group contain the same theme. Existing Internet advertising services deliver ads based on theme congruence. This study has found that mood states induced by webpage content influence the effectiveness of display ads. It is thus recommended that advertising service providers identify the mood states induced by webpages and deliver ads involving

suitable appeals and product types. This raises the issue of how advertisement delivery systems can be made to automatically recognize the moods induced by webpages? Current machine learning techniques, particularly support vector machines, are able to recognize affects from Web articles (Huang and Chen, 2012; Li et al., 2010; Yang et al., 2007). Advertising service providers can analyse the keywords in the content or tracking users' browsing, searching, and rating behaviours to determine if the user is involved with certain products. Techniques for recommendation can be used to identify items that are likely to be interesting or relevant to users (Huang, 2011). Figure 2 shows the guidelines for designing ad delivery systems, based on the findings of this study.

IF the webpage content is positive THEN deliver
　　emotional ads for low-involvement products OR
　　informational ads for high-involvement products OR
　　ads for high-involvement hedonic products OR
　　ads for low-involvement utilitarian products OR
　　ads for high-involvement products OR
　　emotional ads.

IF the webpage content is negative THEN deliver
　　informational ads for low-involvement products OR
　　emotional ads for high-involvement products OR
　　ads for high-involvement utilitarian products OR
　　ads for low-involvement hedonic products OR
　　ads for low-involvement products OR
　　informational ads.

▲ Figure 2　Guidelines for delivering display ads

　　Informational advertisements for hedonic products can be delivered on webpages inducing positive moods when the consumer is highly involved with the product to foster better attitudes, greater purchase intention, and increased clicks on advertisements. They can also be displayed on webpages inducing negative moods if the consumer is not involved with the product. Emotional advertisements for utilitarian products can be delivered on webpages inducing negative moods if the consumer is highly involved with the product. Otherwise, they can be delivered on webpages inducing positive moods. Since the level of attention paid to ads influences attitude, recall, and click rate, service providers should design more attractive ads.

6.3   Limitations and Further Research

The present study has three limitations. First of all, it adopts a self-reporting method for measuring mood reactions and other measures with measurement instruments. The respondents might have been unable to report their exact feelings and perceptions or may have been unwilling to tell the truth. We conducted a pretest to ensure the two articles that we designed could induce positive and negative moods, but did not check this again in the main experiment, because we felt that a lengthy questionnaire would be likely to disturb the subjects' mood states. Secondly, this study did not consider cases in which consumers use direct access or motivational processing strategies. For instance, a charity website that solicits donations may use real tragic stories on webpages to elicit negative moods. In such cases, visitors would likely be motivated to reduce their resulting bad feelings and donate (Dickert et al., 2011). In such cases, mood-incongruent effects could occur. Finally, the subjects were university students in Taiwan they cannot represent all potential audience of the Internet.

Attitude and mood are basic affective concepts. In contrast to mood, attitude is a summative evaluation of a stimulus. In recent years, lots of websites have used the Facebook "Like" Button and Google Plus plugins to allow viewers to share webpage content and indicate that they like or dislike the content. These ratings are good resources for predicting viewers' attitudes toward webpage contents. How does the viewer's attitude toward the webpage content impact the effectiveness of the embedded display ads is worthy of future research. This study calls attention to improving contextual advertising on the Web. Further research is certainly required for a better understanding of the effects of context on Internet ads.

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