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Emotion Induction in Click Intention of Picture Advertisement: A Field Examination

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ABSTRACT

This exploratory study proposes a model for the effect of emotions evoked by insurance advertisement pictures on click attitude conducive to click intention. The moderating role of involvement is also examined. We propose a theoretical model and empirically test it in two stages. Through an online survey, the first stage selects online picture advertisements that produce positive and negative emotions. The second stage empirically tests the model and discusses findings and implications. Our analyses are based on a sample of 170 positive emotion pictures and 212 negative emotion pictures; the main research findings are obtained. The positive and negative emotions positively and significantly influence click attitude: Specifically, the effect of positive emotion is strong, and the negative one is weak. The effect of positive emotion is not significant in highly involved participants but is significant in participants with lower involvement. The effect of the negative emotion is not significant in participants with either high or low involvement. Discussion and implications are also addressed.

KEYWORDS

Advertising; emotion; involvement; picture ad

Background

The rapid growth of online applications has led to the development of a series of innovative advertisements (ads) targeting specific social groups. The ads on media-enriched platforms such as Facebook and personal blogs are displayed not only in side columns but also in users' timelines, in an attempt to capture the attention of users instantly and effectively (Stefan and Linh 2013; Lin, Li and Wu 2015). However, posting ads on online communities will not necessarily elicit interest among users and persuade them to click on ads while browsing. In such large and swift information pipelines such as social media, the ability to capture the attention of users and provoke a reaction to ads in the form of clicking, reading, or sharing them with other users is crucial to the success of online advertisement.

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Previous studies have suggested that a precursor of the reaction to an ad is a multidimensional combination of technological, individual, and psychological appeals (Table 1). Technological appeal mainly refers to the design, development, and presentation of ads to online community users through various types of media (Matthes, Wonneberger, and Schmuck 2014; Jacques, Perr, and Kristensson 2015). Individual appeal (i.e., personalized or behavioral targeting) is based on prior knowledge of consumers' individual relationship with products, preferences, attitudes, emotions, purposes, and behaviors. This approach relies on data analysis, causal models, and empirical surveys (Lin, Li and Wu 2015; Celli et al. 2016). Finally, psychological appeal involves the manipulation of advertising contents in order to evoke consumers' emotions, sentiments, feelings, or moods and thereby stimulate reactions (Stefan and Linh 2013; Matthes, Wonneberger, and Schmuck 2014; Tseng and Huang 2016; Ullah et al. 2016; Lee and Hong 2016).

Specifically, some research efforts have been dedicated to analyses of the effectiveness of advertisement in the insurance domain (Mortimer 2008; Decaudin and Lacoste 2010; Hsu 2012). However, few studies have investigated the effect of positive and negative emotions evoked by the insurance picture ads on the users' click attitude conducive to click intention (see Table 1). Moreover, little is known about the moderating role of involvement in associations between evoked emotion and click attitude. In the context of advertisement, involvement that presents a person's desire, interest, value, cognition, and perception of a subject, object, or person (Zaichkowsky 1994) is crucial to the triggering of click reaction. For example, the emotional effect of an insurance picture ad on users who are familiar with the situation portrayed by the picture may be different from the reaction of those who are not.

To describe the different ways whereby processing stimuli may lead to persuasion, Petty and Cacioppo (1986) introduced the elaboration likelihood theory (ELT) and its distinction between central and peripheral routes. According to the model, the central route to persuasion is likely the result of a person's careful and thoughtful consideration of the true merits of the information presented, whereas the peripheral route is likely the result of an association between the stimulus and positive or negative cues or from simpler or more superficial inference about its merits. By putting together the framework of ELT and the concept of involvement, this study proposes and empirically tests a model that describes the relationship between psychological appeal (positive and negative emotions) evoked by insurance ad pictures and click attitude conducive to click intention. In addition, the study also investigates the moderating effect of involvement in this relationship.

The model was implemented in two steps. The first step was the selection (through an online survey) of insurance ad pictures to serve as positive and

Table 1. Variables linked with reacting behavior (e.g., clicking, reacting, sharing, using, passing, forwarding).

Variables	Research focus	Operational categories	Significant variables	References
Prior knowledge (moderator) Consumer profile	Clicking on sponsored ads	Individual	Prior knowledge Male makes more clicks toward more purchases	Gauzente (2010)
Endorser-based historical data (e.g., users' preferences, influence, diffusion power)	Targeting endorsers for advertisements	Individual	A proposed targeting model	Lin , Li and Wu (2015)
Prior knowledge (factual and structural knowledge)	Clicking or sharing online news	Individual	Factual knowledge on clicking Structural knowledge on sharing	Beam, Hutchens, and Hmielowski (2016)
Advertisement design Advertisement presentation	Clicking on online text-based industry-standard advertisement	Technological	Background color (differentiation of background results in lower click rate)	Jacques, Perr, and Kristensson (2015)
Positive imageNegative image Combined positive and negative image	Affective response to printed advertisements	Psychological	Extreme positive image A greater number of positive pictures	Chowdhury, Olsen, and Pracejus (2008)
Negative brand-related emotions	Inducing negative behaviors (e.g., shifting, complaining, negative word of mouth)	Psychological	Negative emotions	Romani, Grappi, and Dalli (2012)
Emotions	Sharing political communication on Twitter	Psychological	Emotions	Stefan and Linh (2013)
Emotion (positive and negative)	Sharing reviews (e.g., word of mouth)	Psychological	Very positive or negative emotion	Ullah et al. (2016)
Emotion (positive and negative)	Sharing news on Twitter	Psychological	Negative emotion (strongly linked to "like")	Celli et al. (2016)
Likability	Sharing online video ads	Psychological	Variance in likability evaluations	Shehu, Bijmolt, and Clement 2016)
Humor	Sharing job ads Increasing intention of applying jobs	Psychological	Humor (positively influence sharing job ads; negatively influence attitude toward job ads)	Oikarinen and Söderlund (2016)
Emotional appeal Informativeness Advertising creativity Privacy concerns	Increasing purchasing intention	Psychological Individual Technological	Informativeness Advertising creativity Perceived herd behavior Subjective norm	Lee and Hong (2016)

(*continued*)

Table 1. Continued.

Variables	Research focus	Operational categories	Significant variables	References
Perceived herd behavior Subjective norm Attitude toward empathy expression Intention to express empathy			Attitude toward empathy expressionIntention to express empathy	
Video types of ads (Humor, sex, information)	Forwarding an ad and purchasing a brand	Psychological Technological	Humor Sex Information	Petrescu, Korgaonkar, and Gironda (2015)
Emotional appeal Functional appeal Combined (functional and emotional) appealEnvironment concerns	Increasing ads attitude toward brand of green products	Psychological Technological Individual	Emotional appeal Combined appeal	Matthes, Wonneberger, and Schmuck (2014)
Attitudes Subjective norms Perceived control Positive and negative anticipated emotions Past behavior	Desire of using city bicycle	Individual Psychological	Positive anticipated emotions Past behavior	Passafaro et al. (2014)
EmotionsPrejudice	Policy attitude	Psychological	Negative emotion	Cottrell, Richards, and Nichols (2010)
Social preferenceEmotion	Game playing behavior (supporting or sanctioning)	Psychological	Social preference Negative emotion (i.e., anger)	Drouvelis and Grosskopf (2016)

negative emotion evokers. The second step empirically tests the model through users' self-reporting of the emotion induced by the picture ad (Larsen and Fredrickson 1999; Lopatovska and Arapakis 2011).

The rest of this article is organized as follows. Section of Related concepts and hypothesis development presents a review of the literature, highlights research arguments, and develops the hypotheses. The research method is described in section of Method, where the research model, sample, and measures are addressed. Section of Results provides the data analysis results, research findings, and implications. The final section delineates the conclusion and future research focuses.

Related concepts and hypothesis development

Online advertising

The general purpose of an online ad is to deliver messages to online consumers, raise attention to the messages, allow users to browse and click on the ad, and ultimately persuade users to make purchases (Abideen and Saleem 2011; Maciá-Fernández et al. 2012; Breuer and Brette 2012). To explain the link between online ads and their effects on purchasing behavior, the model of AISDALSL (Attention, Interest, Search, Desire, Action, Like/dislike, Share, and Love/hate) was introduced (Wijaya 2012). According to the model, raising attention is the key factor to advertising success. Given the availability of various channels to deliver banner ads, the ability to evoke attention and emotion, prompt browsing and reading, and especially induce clicking remain the key issues defining advertising effectiveness. Table 1 summarizes the outcome of a comprehensive literature survey on studies exploring links between a number of variables and ad-reacting behaviors (clicking, sharing, using, and passing on).

The main conclusions from our search are as follows. First, the variables highlighted in the literature can be classified into three major operating categories, namely individual, technological, and psychological appeal, as well as their combinations. Second, some studies focused only on a single appeal, while others investigated combinations of two or even three kinds of appeal. Third, examined reacting contexts cover a variety of behaviors, such as clicking on wireless banner ads, sponsored ads, and keyword ads; sharing (or passing on) comments and reviews; targeting customers; and evoking emotions toward ads. Those multiple reacting behaviors are the outcome of the three categories of appeal described above. Fourth, technological appeal operates through the enhancement of information and system quality of the ads in order to increase ad attention and purchase intention. Fifth, individual and psychological appeal and their combinations compose the majority of studies, implying increasing attention to associations

between individual profiles and ad effectiveness as well as on the merits of emotion induction models. Finally, the diverse effects of emotions on policy attitudes (Cottrell, Richards, and Nichols 2010), brand attitudes (Romani, Grappi, and Dalli 2012), and use willingness (Passafaro et al. 2014) highlight the importance of emotions in attitude development.

Moreover, the predictive effect of variables on reacting behaviors to ads exhibits substantial variability. In the category of individual appeal, variables significantly influencing ad effectiveness are prior behavior profile, post behavior profile, informativeness, perceived herd behavior, subjective norm, likability, and perceived empathy. In the technological category, identified predictors were background color of ad, creativity of ad design, positive image, negative image, and embedded functions in ads. In the psychological domain, positive emotion and negative emotion were shown to produce different reacting behaviors to ads (e.g., Chowdhury, Olsen, and Pracejus 2008; Celli et al. 2016). For example, emotional appeal is significantly effective in the context of green products (Matthes, Wonneberger, and Schmuck 2014), but not in the context of clicking and sharing ads (Lee and Hong 2016). However, although both studies presented picture ads to participants prior to a questionnaire, the effect of positive and negative emotions produced while browsing ads has not yet been investigated, especially in the context of insurance. As a result, the role of emotions (positive and negative) evoked by picture ads on click attitude and click intention remains under examination.

A previous study by Allen et al. (2005) reported that emotion does predict attitude, a finding suggesting that unknown factors may mediate between emotions and attitudes. For example, feeling happy after exposure to a funny ad (positive emotion) on the one hand and clicking on the ad to access additional information on the other are different phenomena (or attitudes) due to the interplay of needs, desires, experiences, personality, and preferences. In particular, a possibly important effect of involvement in moderation between emotion and the development of click attitude remains under scrutiny.

Emotion

Emotion is the psychological process evoked by a perception of an event, a memory, and specific types of media, such as photographs, voice, and words (Allen et al. 2005; Thompson 2007). Current literature indicates that emotion is a strong but short-term reaction provoked by an internal stimulus, which can then influence a user's attitude toward something or somebody (Scherer 2005). For example, while the process of skimming through an ad is very short, it may still incite both strong and weak emotions. To

further examine the influence of emotion evoked by different types of media, Collinsworth et al. (2014) revealed that pictures are more effective than text in experimental testing of consumers' emotions. A similar finding was presented by Hooge (2014), who argued and confirmed a significant effect of emotions on the willingness to engage in gift giving.

However, an in-depth understanding of the influence emotions must take into account the differences between positive (happy, passionate, console) and negative (anger, sad, fear) emotions (Thompson 2007; Collinsworth et al. 2014). For example, Laros and Steenkamp (2005) proposed that concepts of "basic emotion" (anger and happiness) and "abstract-level" emotions (jealous and hopeful) could characterize both positive and negative emotions. Expanding on this rationale, Ullah et al. (2016) reported that very positive and very negative emotions are behind the behavior of sharing online reviews (word of mouth). A similar finding was presented by Drouvelis and Grosskopf (2016), who reported that social preference in game playing is sensitive to induction by negative emotion (anger) and is likely to have a negative impact on economic behavior. Moreover, Oikarinen and Söderlund (2016) reported that humorous ad contents are positively associated with the willingness to share job ads but are negatively associated with attitude toward the ads. Celli et al. (2016) reported that the use of the "like" action on Twitter while sharing news is strongly associated with negative emotion and explained this behavior as the expression of support for angered users. Shehu, Bijmolt, and Clement (2016) stressed the importance of high likability at the beginning and the end of video ads, while variance in likability evaluations (the "roller coaster effect") has positive effects on video ad sharing. In summary, the above findings imply that both positive and negative emotions are the precursors to behavioral development, although they produce different outcomes.

Previous literature indicates that negative pictures are not likely associated with positive reactions to picture ads (Batra and Stayman 1990). One of the possible reasons that emotion evoked by commercial advertising pictures produces reactions is the role of arousal (Knowles, Grove, and Burroughs 1993). The arousal along with a negative emotion evoked while browsing a negative ad picture may produce negative reactions, such as ignorance when recalling sad experiences or avoidance when sensing threats or fear (Henthorne, LaTour, and Nataraajan 1993; LaTour and Rotfeld 1997). However, the question that the arousal with negative emotion may also possibly produce positive reactions was not addressed, such as insurance purchase when threats or fear are stimulated. Therefore, as an extension of previous research, both positive and negative emotions evoked by picture ads influence user attitude conducive to click intention.

Therefore, as an extension of previous research, this study argues that both positive and negative emotions evoked by picture ads influence user attitude conducive to click intention. Moreover, we argue that the negative emotions (sad, anxious, scared) evoked by a negative picture ad may in some instances attract positive attention conducive to click attitude, especially when the communicated messages relate to personal benefits. Furthermore, planned behavior theory (Ajzen 2002) and its extensions (Pavlou and Fygenson 2006) suggest that attitude is a prerequisite to intention and that they are positively related. Accordingly, the first three hypotheses tested in this study are as follows:

H1: Click attitude positively influences users' click intention.

H2: Positive emotions positively influence users' click attitude.

H3: Negative emotions positively influence users' click attitude.

Involvement

Involvement refers to people's desires, interests, values, and perception of a subject, object, or person (Zaichkowsky 1986). Product (or service) involvement is related to the reactions of consumers to exposure to ads (Zaichkowsky 1994; Park, Lee, and Han 2007; Hsieh et al. 2014). To model the reactions of consumers when receiving information from ads, Petty and Cacioppo (1986) proposed the ELT, a two-mode model that includes a central route mode and peripheral route mode. The central route mode deals with reactions derived from careful consideration. Reaction via the peripheral route mode is typically influenced by outside attractiveness without much concern for the central route.

Park, Lee, and Han (2007) reported that low-involvement consumers are more likely to be influenced by review quantity rather than quality on a website, while highly involved consumers are influenced by review quantity only when review quality is high. A review of literature confirmed that involvement is significantly coupled with attitude and satisfaction (Olsen 2007; Ha and Lennon 2010; Hsieh et al. 2014). Hsieh et al. (2014) reported that the effect of satisfaction on website atmospherics is likely to increase when consumers exhibit high involvement. This implies that when participants possess deeper knowledge and stronger desire and interests (high involvement), they will generally choose the central route mode. Otherwise, they adopt the peripheral route mode. However, existing studies dedicated limited attention to the effect of involvement on the relationship between the emotions evoked by picture ads and click attitude. Therefore, thoughts (or reactions) are probably more easily influenced by positive and negative emotions, attractive information, and comments under the peripheral route

mode than under the central route mode (Petty and Cacioppo 1986; Ullah et al. 2016).

Generally, during the process of browsing an ad, the message is sent by pictures in the ad and thus emotions are evoked. When involvement is high, browsers are highly motivated to explore more about the information (or message) received and as a consequence will exhibit deep-thinking behavior throughout the process (Park, Lee, and Han 2007). In this case, they tend to adopt the central route mode to react to the received information, and the effect of emotions evoked by the received information is likely to be less significant. When involvement is low, browsers have lower motivation to process the received information in depth and will be more likely to adopt the peripheral route mode. In some cases, however, complaints (or needs) may increase and be accumulated as a function of various unknown details and attitude will dramatically change. On the one hand, when positive emotions are evoked browsers may look for additional information in order to satisfy their needs and may be lured into reacting through a given behavior (e.g., clicking, sharing, or even buying). On the other hand, when negative emotions are evoked they may present opposite reactions and simply reject, skip, or ignore the ad or in some cases be also lured into a reply (e.g., clicking, sharing, or even buying) when they perceive that the messages are related to personal benefits. In this case, the effect of emotions evoked by the received information is likely to be more significant.

Therefore, the degree of involvement is likely to influence browsers to choose a different reaction route mode, namely, the central route mode or the peripheral route mode. Consequently, their involvement may differ in terms of impact on the relationship between emotions evoked (positive and negative) and click attitude. Moreover, how ELT can be used to explain the online behavior and the influence of emotions evoked by browsing picture ads in the insurance context requires further investigation. Therefore, the fourth and the fifth hypotheses investigated in this study are defined as follows:

H4: Involvement significantly moderates the effect of positive emotions on users' click attitude.

H5: Involvement significantly moderates the effect of negative emotions on users' click attitude.

Method

Research model

Figure 1 presents the research model and its hypotheses. The model contains an independent variable (emotions), two dependent variables (click attitude and click intention), and a moderating variable (involvement).

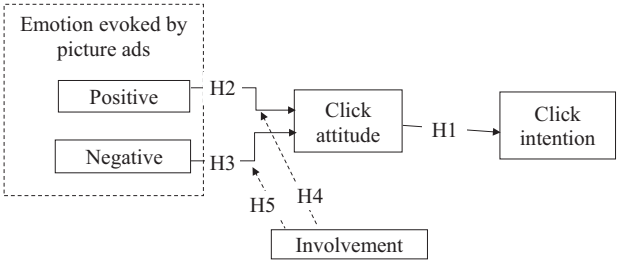

Figure 1. Research model.

Table 2. Operational definitions of variables.

Variables	Operational definition	Subvariables
Emotion	Emotion: The emotion is evoked when social community users are browsing picture ads	Positive emotions: A positive emotion is evoked when social community users are browsing positive picture ads. Negative emotions: A negative emotion is evoked when social community users are browsing negative picture ads.
Click attitude	Click attitude: The degree of attitude toward clicking on an ad	–
Click intention	Click intention: The degree of intention toward clicking on an ad	–
Involvement	Involvement: The degree of participants' desire, interest, values, and the perception toward a product ad	–

The variable emotions include both positive emotions (happiness, excitement, passion) and negative emotions (fear, sadness, anger) evoked by browsing online picture ads. The variable involvement is divided into high degree and low degree of involvement. The operational definition of variables is presented in Table 2.

Measure and sample

The experimental procedure to generate emotions evoked while browsing picture ads had two stages. The first stage was the selection of picture ads via an online survey. At the second stage, we classified pictures as positive and negative through a questionnaire. Then we randomly asked participants to browse either a positive or negative picture in order to evoke emotions. The two experimental states are described below in more detail.

(1) Stage one (picture ad selection)

Online users typically present diverse reactions to picture ads. We selected real ads using positive and negative pictures and from the same

Table 3. Picture ad candidates.

Positive	Negative
P1	N1
	
P2	N2
	

domain (insurance ads). First we performed a Google search for "positive and negative insurance ad picture." This approach was employed because some marketing professionals prefer to use insurance ad pictures displaying positive emotions to convey warm and happy messages. By contrast, others favor negative pictures to induce thoughts of tragedy and financial compensation. We selected search outcomes for each type of emotion. The candidate pictures are presented in Table 3, which include two positive pictures denoted by P1 and P2 and two negative pictures denoted by N1 and N2. The picture ads were released on Facebook together with an online survey for each type of emotions. To avoid cross-effects of emotions evoked by pictures (Laros and Steenkamp 2005), participants were exposed to only one randomly selected picture.

The research targeted users of online communities such as Facebook and the popular local online forum PTT (Professional Technology Temple) as research participants. They were asked to categorize their emotions into positive, negative, or unknown (which was regarded as invalid and eliminated). This approach was adopted to differentiate the two types of picture ads. If the number of "unknown" answers was higher than the two other options, we searched for a similar type of picture ad and repeated the process. We ran tests to identify significant differences in the proportion of

Table 4. Result of picture ad selection.

	Vote result						
Candidates	Positive	Negative	Unknown	Total	Valid votes	*z* value	*p* value
A (positive)	34	6	9	49	40	9.103***	.0000
	$R = 0.850$	$R = 0.150$	–				
B (positive)	28	10	10	48	38	2.992***	.0017
	$R = 0.737$	$R = 0.263$	–				
C (negative)	0	42	4	46	42	10.000***	.0000
	$R = 0.000$	$R = 1.000$	–			(infinite)	
D (negative)	1	39	2	42	40	6.008***	.0000
	$R = 0.025$	$R = 0.975$	–				

Note. $^{**}p < .01$. $^{***}p < .001$.
R = ratio.

"positive" versus "negative" answers. If no significant difference was identified, the picture with the highest number of votes was used in the questionnaire in the second stage. Table 4 presents a comparison of the results, with the picture ad elected as positive denoted by P1 and as negative by N1.

(2) Stage two (hypothesis tests)

The questionnaire was divided into four parts (Table 5). In part one, a randomly selected picture ad (positive or negative) was presented to the participant, who was asked to browse the picture ad and then answer a questionnaire. The participants were asked to respond (self-report) to options based on the basic emotions classification (positive, negative, or not aware) and a 5-point perceived degree scale proposed by Laros and Steenkamp (2005). In part two, 10 items were used to measure the variable involvement based on a 7-point scale (Zaichkowsky 1994). The scores ranged from 10 to 70 if the internal consistency test of 10 items was deemed acceptable.

We divided the participants into two groups according to the obtained score of involvement. A participant who obtained a score between 10 and 40 was regarded as having low involvement, whereas one who obtained a score of 41 to 70 was considered highly involved. All items of the variable involvement were used if the internal consistency test of 10 items was acceptable; otherwise, the score range for each group (low involvement or high involvement) was reset according to the actual items used. Reverse items were used to help to confirm validation. The returned value was adjusted for consistency.

In parts three and four, 3 items were used to measure the perception of participants on a 5-point scale for the variable click attitude and the variable click intention, respectively (Ajzen 2002). Pretest followed by modification and revision, when necessary, was conducted to ensure that the contents were readable, understandable, and acceptable. The questionnaire

Table 5. The designed questionnaire.

Part one: Emotion response

Below is an online picture ad. Please take a look at it and answer the following questions.

< The picture ad is shown here >

When I see the picture ad, I feel:

- Happy, passionate, comfortable (positive emotion).
- Sad, anxious, scared (negative emotion).
- Not aware.

Part two: Involvement

The insurance ad for me is:

		7	6	5	4	3	2	1	
Inv1	Important								Not important
Inv2	Not interesting								Interesting
Inv3	Relevant								Irrelevant
Inv4	Exciting								Dull
Inv5	Meaningless								Meaningful
Inv6	Attractive								Unattractive
Inv7	Fascinating								Not special
Inv8	Of no value								Valuable
Inv9	Self-related								Not self-related
Inv10	Not necessary								Necessary

Part three: Click attitude

1. Clicking on the picture ad is a good idea.
2. It is good for me to click on the picture ad.
3. My attitude to click on the picture ad is positive.

Part four: Click intention

1. will be considering to click on the picture ad.
2. I will be intending to click on the picture ad.
3. I will very possibly click on the picture ad.

Table 6. Descriptive statistics for both positive and negative picture ads.

		Positive		Negative	
Items		Sample ($n = 170$)	Percentage	Sample ($n = 212$)	Percentage
Gender	Male	80	47.1	92	43.4%
	Female	90	52.9	120	56.6%
Age, years	≤21	36	21.2	48	22.6%
	21–30	119	70.0	138	65.1%
	≥30	15	8.8	26	12.3%
Involvement (BR test)	High	88 (mean = 49.54)	47.63	102 (mean = 49.42)	48.11
	Low	82 (mean = 29.93)	52.37	110 (mean = 28.78)	51.89
Involvement (AR test)	High	78 (mean = 44.38)	45.88	102 (mean = 49.42)	48.11
	Low	92 (mean = 26.49)	54.12	110 (mean = 28.78)	51.89

Note. BR: before reliability; AR: after reliability.

was posted on Facebook using convenient sampling for 4 weeks. A prize drawing to win a shopping voucher was used to encourage responses.

Results

Data analysis

Of the returned 501 questionnaires, 387 (77.2%) were valid. "Not aware" responses, responses that differed from the defined picture type (answering positive to a negative picture ad), or incomplete answers were considered invalid. Descriptive statistics are presented in Table 6.

A total of 170 valid responses were returned for the positive ad (positive group), of which 80 were males and 90 were females. Most participants (70%) were aged from 21 to 30. A total of 212 valid responses were returned for the negative ad (negative group), of which 92 were from males and 120 were from females and 65.1% of whom were aged from 21 to 30. In the positive group, 88 participants demonstrated high involvement, with a mean of 49.54, whereas 82 participants demonstrated low involvement, with a mean of 29.93. In the negative group, 102 had high involvement, with a mean of 49.42, and 110 had low involvement, with a mean of 28.78.

Results of reliability analysis are shown in Table 7. Cronbach's alpha was used to check for the internal consistency of variables. The items grouped as factors or subfactors were adjusted based on the criteria that if the total value of items was less than or equal to 0.5, then the item should be deleted. Exploratory factor analysis was used to identify actual factors. As shown in Table 7, the reliabilities of click attitude and click intention were appropriate. The first item, DoE in the Table 7 was used for the subjects to response to the degree of emotions while browsing the picture ad. The results showed that in the positive group, the factor loading of item 10 (Inv10, not necessary/necessary) of the involvement variable was 0.465, which was less than 0.50, and thus the item was deleted. Accordingly, 9 items were used to differentiate lowly involved participants (from 9 to 36

Table 7. Reliabilities for the positive group.

		Mean (*SD*)		Cronbach's α	
Variables	Items	Positive group	Negative group	Positive group	Negative group
DoE	ER: When I see the picture ad, I feel …	3.32 (0.600)	3.67 (0.73)	–	–
Cla	Cla1: Clicking on the picture ad is a good idea. Cla2: It is good for me to click on the picture ad. Cla3: My attitude to click on the picture ad is positive.	3.933 (0.192)	3.439 (2.405)	0.883	0.890
Cli	Cli1: I will be considering to click on the picture ad. Cli2: I will be intending to click on the picture ad. Cli3: I will very possibly click on the picture ad.	3.625 (2.431)	3.329 (2.930)	0.906	0.897
Inv	Inv1: Important vs. not important Inv2: Not interesting vs. interesting Inv3: Relevant vs. irrelevant Inv4: Excited vs. dull Inv5: Meaningless vs. meaningful Inv6: Attractive vs. unattractive Inv7: Fascinating vs. not special Inv8: No value vs. valuable Inv9: Self-related vs. not self-related Inv10: Not necessary vs. necessary	3.856 (1.267)	3.871 (2.526)	0.954	0.938

Note. SD: standard deviation; DoE: degree of emotion; ER: emotional response; Cla: click attitude; Cli: click intention; Inv: involvement.

points) from highly involved ones (from 37 to 63 points). Adjustment was necessary to regroup high-involvement and low-involvement participants. The positive group comprised 92 participants who demonstrated low involvement, with a mean 26.49, whereas 78 participants were highly involved, with a mean of 44.38. The results were presented in Table 6 (after reliability test). In the negative group, there were no items deleted. Principal component analysis was used to derive the actual factors of click attitude and click intention. The internal consistency of variable involvement (moderator) was tested acceptable (Table 8). Moreover, the items of variable click attitude and click intention were considered acceptable because the factor loading for each variable ranged from 0.835 to 0.880.

To check for validity, we applied the basic common method variance (CMV; Podsakoff et al. 2003; Malhotra, Kim, and Patil 2006; Chang, van Witteloostuijn, and Eden 2010) to the positive and negative groups, although earlier literature did not place much emphasis on it (e.g., Lindell and Whitney 2001). First, the data sources were originally diverse

Table 8. Factor analysis results for positive and negative groups.

	Factor loadings			
	Positive group		Negative group	
Items	Click attitude	Click intention	Click attitude	Click intention
Cla3	0.880	0.215	0.869	0.305
Cla1	0.880	0.232	0.864	0.242
Cla2	0.878	0.251	0.835	0.213
Cli3	0.235	0.879	0.355	0.868
Cli1	0.342	0.866	0.242	0.856
Cli2	0.347	0.849	0.217	0.843
	Items of Inv		Items of Inv	
	Inv6	0.882	Inv5	0.872
	Inv1	0.863	Inv1	0.863
	Inv3	0.855	Inv3	0.860
	Inv5	0.835	Inv6	0.824
	Inv2	0.780	Inv8	0.813
	Inv4	0.780	Inv4	0.778
	Inv7	0.778	Inv10	0.777
	Inv9	0.728	Inv2	0.776
	Inv8	0.727	Inv9	0.740
			Inv7	0.696

Note. Cla: click attitude; Cli: click intention; Inv: involvement.
KMO (Kaiser-Meyer-Olkin value) of positive group (Cla and Cli) is 0.886; KMO of negative group (Cla and Cli) is 0.876.

Table 9. Validity for positive and negative groups.

	Positive group				Negative group			
Variable	CR	AVE	Cla	Cli	CR	AVE	Cla	Cli
Cla	0.883	0.773	**0.879**		0.890	0.733	**0.856**	
Cli	0.906	0.748	0.718	**0.865**	0.897	0.732	0.818	**0.856**

Note. De: degree of emotion evoked; Cla: click attitude; Cli: click intention; Inv: involvement; CR: composite reliability; AVE: average variance extracted.
The number in the bold diagonal course is the square root of AVE.

(Facebook users) to reduce single-group bias while maintaining research focus. Second, the measured items on the questionnaire were based on literature review. Research arguments were then revised and finalized via pretest. Third, measured items (Inv10 in the involvement variable) with low factor loadings were deleted. Finally, the correlation coefficients of factors with average variance extracted (AVE) were used to check for validity (Table 9). For example, the AVE of click attitude (Cla) in the positive group (0.773) was greater than 0.5, and the square root of AVE (0.879) was greater than the correlation coefficient with click intention (0.718).

The role of the moderator (involvement) in the model is visually presented in Figures 2 and 3 for the positive and negative groups, respectively. Although there was no intersection between the means of emotion and attitude, the slopes of the two lines differed, implying a possible moderation effect of involvement. However, an intersection is observed in Figure 3,

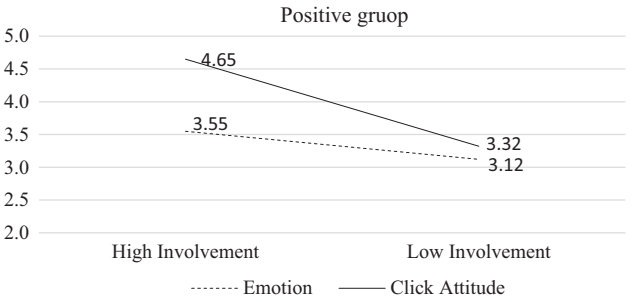

Figure 2. Effect of involvement on the relationship between positive emotion and click attitude.

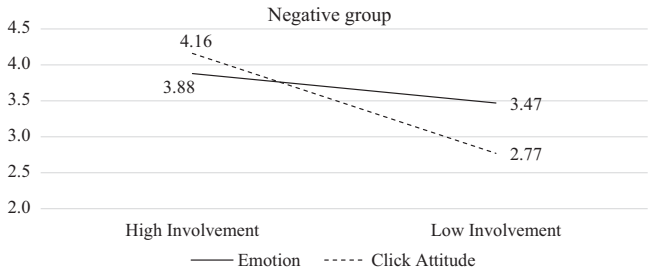

Figure 3. Effect of involvement on the relationship between negative emotion and click attitude.

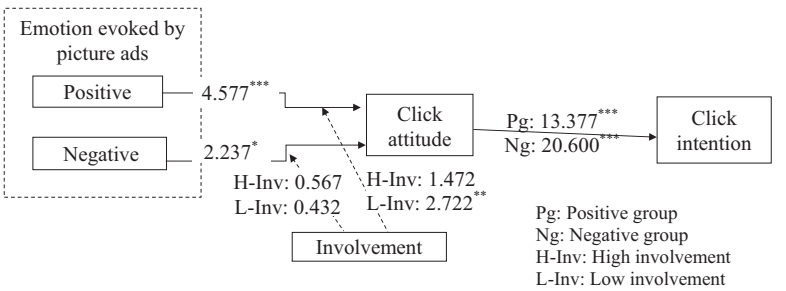

Figure 4. Hypothesis test results.

indicating that the impact of moderator (involvement) on H3 for the negative group differs. Although it was too early to conclude whether the H5 (moderation effect on H3) was significant, the analysis result returned a positive sign, which supported the research argument that a moderating effect of involvement is possible. The validity check based on the basic CMV did not reveal unacceptability. Thus, the study proceeded to hypothesis testing.

Using the regression model, the results of the hypothesis tests are presented in Figure 4 and Table 10. The variable click attitude significantly

Table 10. Results of hypothesis tests.

	Group							
	Positive				Negative			
DV	Click intention		Click attitude		Click intention		Click attitude	
IV	*t*	*p* value	*t*	*p* value	*t*	*p* value	*t*	*p* value
Cla (H1)	13.377***	.000			20.600***	.000		
PE (H2)			4.577***	.000				
NE (H3)							2.237*	.026
R^2	0.516		0.111		0.669		0.023	
Moderator								
Inv	H4	L-Inv	2.722**	.007	H5	L-Inv	0.432	.666
		H-Inv	1.472	.145		H-Inv	0.567	.572

Note. DV: dependent variable; IV: independent variable; Cla: click attitude; Cli: click intention; PE: positive emotion; NE: negative emotion; Inv: involvement; L-Inv: low involvement; H-Inv: high involvement.
*$p < .05$. **$p < .01$. ***$p < .001$.

influenced the variable click intention of online community users. Thus, H1 is supported for both the positive group ($t = 13.377$, $p = .000$) and the negative group ($t = 20.6000$, $p = .000$). This finding is consistent with our expectation that click attitude toward picture ads is significantly associated with click intention of the positive and negative groups. Meanwhile, the test of H2 ($t = 4.577$, $p = .000$) confirmed that positive emotions evoked by a positive picture ad were strongly and significantly related to click attitude. However, H3 ($t = 2.237$, $p = .026$), which represented the effect of negative emotions on click attitude, was significantly but weakly supported. The R^2 values for H2 and H3 were low ($R^2 = 0.111$ for the positive group and 0.023 for the negative group).

Table 10 shows the moderation effects of involvement on H2 and H3. The moderation effect (H4) on positive emotions (H2, $t = 4.577$, $p = .000$) was significant for the low-involvement participants ($t = 2.772$, $p = .007$), but not for the highly involved ones ($t = 1.472$, $p = .145$). The moderation effect (H5) on negative emotions (H3, $t = 2.237$, $p = .026$) was significant for neither the low-involvement nor the high-involvement participants ($t = 0.432$, $p = .666$ and $t = 0.567$, $p = .572$, respectively).

Discussion and implications

Discussion

First, the psychological appeal of emotions evoked by the picture ads is significantly and positively associated with users' click attitude and click intention in the context of insurance advertising. The finding is consistent with the concepts, arguments, and findings presented in the previous literature, such as the affective response to extreme positive images in Chowdhury, Olsen, and Pracejus (2008), negative behavior induction by negative emotions in Romani, Grappi, and Dalli (2012), buying behavior of emotions in

Hooge (2014), and sharing online reviews exhibiting extreme positive and negative emotions in Ullah et al. (2016). However, our findings are not consistent with those of Lee and Hong (2016), who did not identify any significant influence of emotional appeal (individual, technological, and psychological appeal) on clicking ads. In addition, our findings are different from those of Drouvelis and Grosskopf (2016), who studied the topic of game playing and reported that induced negative emotions (e.g., anger) are likely to have a negative impact on economic behavior. Such a finding implies that negative emotions may produce diverse reactions, such as skipping, ignoring, or resisting. Particularly, the finding that the arousal with the negative ads is unlikely to produce positive action (Batra and Stayman 1990; Knowles, Grove, and Burroughs 1993) is no longer suitable to explain the reacting behaviors in the context of online insurance picture ad.

Second, the moderation analysis results (Table 10) reveal that H4 and H5 are supported. For the H4 (positive group), the effect remains significant but weak for low-involvement groups ($t = 2.772$, $p = .007$) and insignificant for the highly involved group ($t = 1.472$, $p = .145$). This finding theoretically supports the finding by Hsieh et al. (2014), who showed that the degree of involvement differs in impact on the satisfaction derived from commercial websites.

Third, our findings also reinforce the concepts and arguments of Allen et al. (2005), who stated that unknown factors may operate between emotions and attitudes. Although based on a different research focus, our findings also support the previous report of Park, Lee, and Han (2007), in which they argued that people are likely to exhibit high motivation (or interest) to acquire additional information when involvement increases. In this case, the effect of emotions may be less significant. Moreover, our finding reveals that the highly involved group shows no significant effect while in the low-involvement group the effect remains, but with weaker significance. The effect of emotions may accumulate when the individuals are not fully informed or perceive threats (low involvement), which makes them more likely to change their attitude toward decision making. In this case, the emotions involved will be likely to raise, and the consequence of the accumulated negative emotions turns a negative attitude into skipping or ignorance, but in some cases may be lured into a reaction.

Finally, to estimate the effect of precursors on users' online clicking behavior, our model sets psychological appeal as the independent variable. This study reveals that the positive and negative groups are likely to receive a significant impact of emotions evoked on click attitude conducive to click intention. The findings are more evident among academics because a transition gap might exist in the perception of researchers in the contexts of marketing and advertising. This transition gap has not yet been sufficiently

Table 11. A summary of theoretical implications.

Research variables			References for previous research arguments and findings
Variables	Main research arguments	Research implications	
Click attitude	H1 (S): Participants perceive that when browsing online picture ads, click attitude will influence click intention.	Click attitude positively influences click intention when browsing online picture ads.	Consistent with Ajzen (2002), Pavlou & Fygenson (2006)
Positive emotion	H2 (S): Participants perceive that positive emotions evoked by the positive picture ad will influence their click attitude.	Positive emotion positively and significantly influences click attitude when browsing positive picture ads.	Consistent with Chowdhury, Olsen, and Pracejus (2008), Ullah et al. (2016)
Negative emotion	H3 (S): Participants perceive that negative emotions evoked by the negative picture ad will positively influence their click attitude.	Negative emotion positively and significantly, but weakly, influences click attitude when browsing negative picture ads.	Consistent with Ullah et al. (2016), Drouvelis and Grosskopf (2016), Cottrell, Richards, and Nichols (2010), Romani, Grappi, and Dalli (2012), Celli et al. (2016)
Involvement	H4 (S): The degree of participants' involvement will moderate the result of H2.	Positive emotion is not significantly associated with click attitude for the high-involvement participants. Positive emotion is positively and significantly associated with click attitude for the low-involvement participants.	N/A
	H5 (S): The degree of participants' involvement will moderate the result of H3.	Negative emotion is not significantly associated with click attitude for either high- or low-involvement participants.	N/A

Note. S: Supported.

addressed in the literature. Moreover, although our study reveals a significant moderation effect of involvement, it raises a further research issue: whether the reactions to negative emotions have been poorly modeled, as they depend on various appeals (individual and technological) and not simply on the negative emotions influencing clicking or not clicking an online insurance picture ad. This concept is not covered by the ELT.

Implication to theory

A summarized comparison with previous research arguments and findings as well as theoretical implications are delineated in Table 11. Theoretically, first, most reactions in cyberspace such as engaging, avoiding, skipping, ignoring, or resisting ads are generally influenced by negative or positive emotions; however, these emotions may result from a temporary stimulus (Martin, Gnoth, and Strong 2009), such as benefits (bonus and lottery), competition (the number of received "likes"), environments (social preferences on Facebook fan pages), or instant personal choices (anger at something or

somebody for some opinions). One of the current avenues explored by cybercriminals is the use of phishing attacks to manipulate messages embedded in an ad in order to intentionally induce browsers' emotions conducive to clicking, sharing, or even providing personal information. Our results thus draw a particular attention to cybersecurity, the consideration of emotional manipulation, and ELT while dealing with online reactive behaviors.

Second, as discussed above, the ELT (Petty and Cacioppo 1986) proposed that participants who adopt the center route mode are likely to react to the received message (or information) with more diverse thoughts (needs, desires, personal benefits, or actual situations) than those adopting the periphery route mode (instant feeling). Thus, highly involved participants tend to exhibit deeper knowledge about the picture advertisement and more developed thinking skills throughout the process. Both center and periphery routes induced rational thinking behavior with respect to the reaction to emotions evoked. This implication is supported by our finding that highly involved participants did not link positive emotions with click attitude when exposed to a positive insurance picture ad. By contrast, low-involvement participants preserved a significant link between positive emotions and click attitude; that is, they are more inclined to adopt the periphery route mode, which possibly drives them to react instantaneously to a message received when browsing a positive insurance ad.

Finally, for the negative group, the results in Table 10 support our argument that the effect of involvement differs in the case of the relationship between negative emotions and click attitude. This finding shows that the difference between high- and low-involvement participants no longer exists in the case of reaction to browsing an insurance ad picture that induces negative emotions. This implies that the negative group did not seem to follow the predictions of ELT and, therefore, that the behaviors of browsing a negative insurance picture ad may be diverse or even hardly predictable for some people, depending on the situation and context.

Implication to practice

First, it has been previously mentioned that emotions are psychological processes that produce outcomes via the senses of sight, taste, hearing, and/or touch. The outcomes possibly lead to actions. When online community users browse picture ads, they are generally influenced by sight, which delivers unusual emotions, such as excitement, happiness, gracefulness, and brilliance. Online marketing professionals or advertising agencies in the insurance industry may place emphasis on the impact of both positive and negative picture ads on emotions development. However, they should focus on positive emotions when involvement is not an issue.

Second, when the degree of participant involvement is considered, advertisers should realize that emotions are unlikely predictors of click attitude in highly involved participants, but a strong precursor in the case of low-involvement participants. This finding has two implications. First, instead of focusing on the emotions evoked by picture ads, highly involved participants care about other factors (personal benefit, preference, needs, desires) because their reaction is thoroughly rational, as indicated by their use of the center route mode. In particular, positive picture ad designs should incorporate individual and technological appeals into the psychological appeal in order to more comprehensively attract the attention of participants. Second, low-involvement participants usually tend to react instantly to arriving messages because of their use of the periphery route mode. This tendency is confirmed by the significant association between emotions and click attitude.

Third, although our findings reveal that negative emotions are associated with click attitude, our analysis of moderation effects indicate that high- and low-involvement participants do not accept negative emotions as predictors of click attitude. A number of unknown factors regarding the effects of negative emotions need further exploration, and therefore advertisers should focus on positive insurance ads. However, that is not to say that negative ads cannot attract attention. New studies incorporating additional information on the effect of negative emotions on reaction would be a significant contribution to insurance marketing and creation of insurance picture ads.

Finally, online behavior in a rapidly changing online society is a multidimensional process, and as such it cannot be addressed by a single solution. Our findings indicate that browsing online picture ads does not totally follow the predictions of the ELT (Petty and Cacioppo 1986) regarding the development of click attitude via emotion induction. This finding implies that many unknown factors influence the behavior of the virtual community with regard to clicking picture ads. From a micro perspective, browsing online picture ads may or may not represent an instant behavior. Thus, the role of involvement in predicting online behaviors may change over time. Practically, detecting whether a picture ad browser is highly involved or not is a difficult task. On the one hand, analysis via users' profiles (individual appeal) should be an approach to be adopted in the future. On the other hand, our study suggests that emphasis should be placed on how to design insurance picture ads that stimulate high positive emotions.

Limitations

Our study presents limitations, despite that our model was carefully implemented in two stages, namely picture ad selection and hypothesis testing.

CMV was considered, reduced, and verified to ensure the validity of data analysis. The choice of participants from online communities was based on a sampling plan. A prize drawing was used to increase willingness to participate. Although the study tried to diversify data sources and applied a questionnaire with a small number of items, the data collection process at the individual level may have produced common method and response variances (Podsakoff et al. 2003). These variances may occur at different levels of abstraction and perception, or even cognition and experience, such as at the level of participants, item, scale, response format, and context.

In order to reduce such variances, the study presented the online questionnaire on an open platform where community users could freely join in the study. At the item level, a pilot test was conducted to evaluate the validity and readability of the questions. At the scale level, a 5-point Likert scale for each item was used. The research question was framed in the context of insurance ad pictures. As for data analysis variance, the study deleted items with low factor loadings and tested common analysis method variance using AVE to compare other composites. Although the study attempted to reduce variances, the results may still contain unavoidable CMV. Moreover, additional attention should be paid to limitations and implications to insurance advertising and country contexts. Given that our model was developed for the insurance market in Taiwan, its conclusions may not be appropriate when examining other topics and other countries.

Finally, our study focused on online communities targeted by advertising campaigns of Taiwan's insurance industry. The culture, lifestyle, and perception of Taiwan's insurance industry advertising might differ in other countries. While our study focused on a single factor to avoid complexity, it did not consider precursors such as emotions prior to browsing a picture ad, individual appeal, and technological appeal. Factors such as actively looking for, passively facing with, or inadvertently browsing picture ads were also not considered. These are issues that future studies should address.

Conclusions

This exploratory study focused on the importance of emotions raised by picture ads in the insurance context. The positive and negative emotions evoked by picture ads were examined for their effect on click attitude conducive to click intention of online browsers. The picture ads were selected via online survey to reduce cognitive bias. The potential determinants (emotions evoked) of click attitude were defined and examined, and the moderation role of involvement was examined. Given the above, this study serves as theoretical and practical groundwork for research on online

picture ads with a focus on the effect of evoked emotions. Our findings suggest that positive emotions should be taken into account when developing insurance picture ads aiming at enhancing click attitude and click intention. Negative picture ads may not be considered a strategic factor by online marketing professionals. Further research may include case or multi-case studies of a specific context so as to extend our findings and provide additional insights into marketing via online picture ads in the context of insurance.

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