



Gender Responses to Emotional Appeals in Advertising: Comparing Self-Reports and Facial Expressions

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1 Introduction

Emotional appeals in advertising represent one of the most frequently used creative strategies. Considering that their effectiveness lies on consumers' subjective reactions to emotions, understanding gender differences in affective responses can form the basis for the development of successful advertising messages (Schwarz et al. 2015). Prior research has highlighted various gender reactions across different emotional appeals in advertising. For instance, women appear to be more receptive towards subtle advertisements that appeal to warmth and affection (Schwarz et al. 2015), while men are more positive towards aggressive, violent and provocative advertisements (Swani et al. 2013).

These differences have been attributed to biological and most importantly social factors (Putrevu 2001; Weinberger et al. 2016). The paternalistic social standards have "constructed" a fragile, susceptible identity for women and a dominant, dynamic role for men (Meyers-Levy and Sternthal 1991). In this light, women learn to effortlessly express their emotions (Simon and Nath 2004), while men are told to oppress their emotions towards third parties, in order to maintain a strong social image (Gallois and Callan 1986). Research findings corroborate to

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part of Springer Nature 2021

M. Waiguny and S. Rosengren (eds.), *Advances in Advertising Research (Vol. XI)*, European Advertising Academy,
https://doi.org/10.1007/978-3-658-32201-4_17

the above pattern, as men avoid revealing that they are enjoying an advertisement that depicts warm emotions when they are watching it in the presence of others (Fisher and Dubé 2005). Nonetheless, there is no evidence on how women experience advertising appeals that are incompatible with the traditional female stereotype. The proposed study aims to navigate these waters and elucidate the nature of women's emotional experience when exposed to advertisements that display scenes of aggressiveness.

In a comprehensive review of emotion measurement in advertising, Poels and Dewitte (2006) distinguished between two types of measures of emotions in advertising: a) self-reports and b) autonomic, encompassing heart rate, skin conductance and facial expressions. The majority of the relevant literature has extensively used self-assessment questionnaires in order to capture the emotional experience of subjects during their exposure to advertising messages. Nonetheless, the limitations of these measures have been widely acknowledged, urging the need to focus on applied research in order to directly observe human behavior (Baumeister et al. 2007). Considering that the validity of self-reports for measuring emotions can be biased by cognitive or social desirability constraints, the measurement of autonomic reactions may cater for the weaknesses of self-evaluation measures as they capture emotional responses beyond the subjects' control (Poels and Dewitte 2006) that can hardly be manipulated by research subjects (Cacioppo and Petty 1985; Wang and Minor 2008). Autonomic measures may record respondents' brain activity, heart rate fluctuation, skin conductance variation, eye movement and facial expressions (Lewinski et al. 2014). However, with the exception of facial recognition software, the majority of the aforementioned measurement tools are invasive (Hamelin et al. 2017), posing ecological validity concerns. Thus, they are seldom used in advertising research. The proposed study aims to contribute to the literature on emotion measurement in advertising research through the combined use of a self-evaluation questionnaire and facial expression analysis. In particular, the study aims to trace whether the expressed emotions portrayed in the participants' faces, detected by a facial recognition software during their exposure to emotional advertising stimuli, coincide with their self-reports.

Therefore, the objective of this study is to address the following research questions:

- (a) What are the emotional reactions reported by men and women when they are exposed to warm, aggressive and emotionally neutral advertising stimuli?

- (b) What are the expressed emotions (as detected by the analysis of facial expressions) shown by both genders, upon their exposure to warm, aggressive and emotionally neutral advertising stimuli?

2 Literature Review

2.1 Gender Differences in the Expression of Emotion

The perception of gender differences in their emotional responses is one of the most dominant and commonplace stereotypes. “*Everyone knows the prevailing emotion stereotype: She is emotional, he is not*” (Shields 2002, p. 3). Numerous studies support that gender differences in terms of the expression of emotional experience are arising from the roles undertaken by men and women in the society (Eagly 1987; Wood and Rhodes 1992). According to the normative theory of Hochschild (1975), the differences between men and women in emotional reactions and expressiveness converge with gender specific beliefs of the underlying culture. Hence, gender stereotypes signify the way in which people should (or shouldn't) feel and express under different circumstances. Thus, when emotional experience deviates from pre-specified rules, people are more inclined to manage and ultimately repress their feelings, in order to demonstrate a more appropriate emotional behavior.

Differences in social roles form the foundation of stereotypical beliefs about the expected emotional behaviors of men and women. Women are described as emotionally expressive and unstable, preoccupied not only with their own emotional world but with that of others as well (Bakan 1966; Grossman and Wood 1993). On the other hand, contemporary male stereotypes are either linked with the desire for dominance and superiority or with the stoicism associated with the strict avoidance of behaviors that reflect sensitivity (Eagly et al. 2000; Fisher and Dubé 2005).

3 Hypotheses Development

Emotional appeals in advertising can be categorized in terms of valence as positive (e.g. warmth, love) and negative (e.g. guilt, aggression, shame, fear). Aggression covers a wide range of behaviors, situations and events that may cause harm and injury of varying sorts and differing magnitudes (Berkowitz 1993). On the other hand, warmth is defined as a positive, gentle and volatile emotion and as part of

empathetic emotional response (Coke et al. 1978). Aaker and Bruzzone (1981) argue that warmth is associated to advertisements that are using sentimental, “family and friends” creative approaches, which attempt to make viewers feel good about themselves.

The relationship between emotional reactions and advertising evaluation is likely to be colored by gender. Men have been found to prefer advertising scenarios that promote competitiveness and demonstrate authority (Prakash 1992) as well as more violent advertising scenarios than women (Swani et al. 2013). On the contrary, research evidence demonstrates that warm appeals are more effective in raising brand awareness and loyalty for women compared to men (Aaker and Stayman 1989; Geuens and de Pelsmacker 1998).

In addition, relevant studies reveal the existence of differences in the emotional expressivity of men and women that can be traced in the greater desire of men to adapt their emotional profile in what they consider to be appropriate or socially acceptable (Fischer and Manstead 2000; Fisher and Dubé 2005). In particular, men often experience emotions incongruent to the male stereotype in private conditions, but they avoid the expression of these very emotions when they are in the public sphere (Fisher and Dubé 2005). As far as women are concerned, research conducted by Hoffman et al. (2005) showed that women perceive the expressiveness and orientation towards others as a fundamental characteristic of their femininity, highlighting the potential influence of gender clichés on their responses.

Following the preceding analysis, gender reactions in emotional advertising appeals are expected to vary in terms of the type of appeal (aggression, warmth and non-emotional) and the congruence of the particular emotional appeal to the gender stereotype. Specifically, the incongruence between the appeal and the gender’s emotional stereotype would lead to lower levels of positive and higher levels of negative emotions.

H1: Males who are exposed to an aggressive advertising appeal will report more positive and less negative emotions compared to females

H2: Females who are exposed to a warm advertising appeal will report more positive and less negative emotions compared to males

H3: No significant differences are expected between males’ and females’ emotional responses for the non-emotional advertising appeal

Although numerous studies have examined emotions using self-report questionnaires, it should be emphasized that these measures are subject to the influence of gender stereotypes and social desirability bias (Grossman and Wood 1993; Hess

et al. 2000). In that sense, the strong tendency of people in presenting themselves favorably is likely to distort the information retrieved from such measures. Thus, participants may be unwilling to give an honest answer, providing information that reflects reality with less accuracy, due to self-defense or impression management concerns (Maccoby and Maccoby 1954). This phenomenon is known as social desirability bias and can be a critical issue in several research designs, as the presence of the researcher may invoke a desire to save face (Stodel 2015).

According to LaFrance and Banaji (1992), gender differences tend to occur in terms of emotional expressiveness rather than emotional experience. Thus, there is a possibility that the reported differences in emotional reactions between males and females is an illusion created by stereotypes so deeply engraved in popular culture, that can predispose participants' answers (McRae et al. 2008). However, autonomic measures such as the analysis of facial expressions are outside of the respondent's conscious appraisal and hence provide a more accurate assessment of the respondent's emotional reactions (Poels and Dewitte 2006), less affected by social desirability. Facial expressions can be measured through electromyography (EMG), using coding systems like the Facial Action Coding System (FACS) (Ekman and Friesen 1978) and more recently, automated facial expression recognition systems. Studies using such measures suggest the absence of differences between the two genders in terms of emotional responses (e.g. Danner et al. 2014; Hamelin et al. 2017). Therefore, it would be reasonable to assume that facial expression analysis would suggest the absence of differences between the two genders such as:

H4: The effect of gender on positive and negative emotions will not be significant when participants' emotions are captured through the analysis of facial expressions

4 Methodology

4.1 Participants and Experimental Design

In order to test the research hypotheses a 2 (sex: male or female) \times 3 (emotional appeal: warmth, aggression, non-emotional appeal) between-subjects experiment was conducted. The study recruited students from a large university in Northern Greece. The experimental procedure in all three scenarios was identical. Two researchers (a male and a female) were present during the procedure. Participants were distributed in three experimental groups: the first group was exposed to a warm advertisement, the second group watched the aggressive advertisement,

while the third experienced the non-emotional one. The total sample of the experiment comprised of 54 respondents (28 males). All subjects were instructed to watch the advertisement on a computer screen and then complete a questionnaire that measured their emotional reactions.

4.2 Stimulus Materials

For the purpose of the experimental procedure one TV commercial for a filter coffee brand was created by a professional advertising agency. The use of TV commercials has been qualified for the experiment, since they are able to express precisely the different emotional appeals, namely, warmth and aggression. In contrast, when static print advertisements are used in experimental procedures for the study of advertising effectiveness, emotional variations tend to be very small (Weinberger and Gulas 1992).

The choice of the product was based on a pretest with 48 participants that were instructed to report their feelings regarding 14 different types of products. Coffee is a low involvement product that appeals to both sexes and was associated with both warmth and aggressiveness. In order to increase the ecological validity of the study, the coffee brand shown in the advertisement is an actual brand that is not available in Greece. Items measuring familiarity with the brand were included in the questionnaire in order to rule out potential bias due to existing attitudes and beliefs about the brand. Each advertisement was developed in three different versions (a warm, an aggressive, and a non-emotional version). The manipulation of the emotional appeals was based on the character that performed the main role in the scenario. The ad depicted a man, making coffee and sipping from his mug with delight, when a female character approached and gently tried to take his mug. In the aggressive scenario the man threatens the woman with a knife and takes the mug back. In the warm version, the man offers affectionately to the woman a strawberry cake which she savours with enjoyment, while he is gently taking the mug from her hand. In the non-emotional version, the man simply denies to give his mug to the woman.

4.3 Measures

The emotional reactions triggered by the advertisements were measured by the 22-item scale developed by Holbrook and Batra (1987). The questions focused on emotions of happiness (positive emotion), sadness, anger and fear (negative

emotions). These emotions can also be detected by the FaceReader 8.0 software. Manipulation checks of the emotional appeals of warmth and aggression were conducted using the items developed by Swani et al. (2013). All variables were measured using five-point Likert scales ranging from (1) “strongly disagree” to (5) “strongly agree.” During participants’ exposure to the advertisements, their facial expressions were recorded with the use of a computer camera and analyzed through FaceReader 8.0 (Noldus Information Technology) software in order to be compared with their responses provided in the self-reported questionnaires.

4.4 Results

Perceived warmth was higher for the warm ad ($M = 3.72$) compared to the non-emotional ($M = 2.85$, $p = 0.038$) and the aggressive ($M = 2.86$, $p = 0.028$) ad ($F(2, 51) = 4.586$, $p = 0.015$). Perceived aggressiveness was also higher for the aggressive ad ($M = 3.1$) than the non-emotional ($M = 1.56$, $p < 0.001$) and the warm ad ($M = 1.13$, $p < 0.001$) ($F(2, 51) = 21.255$, $p < 0.001$) which indicates a successful manipulation.

A 2 (sex: male or female) \times 3 (emotional appeal: warmth, aggression, non-emotional) between-subjects multivariate analysis of variance (MANOVA) was conducted. Happiness, sadness, fear and anger were treated as dependent variables in order to test hypotheses H1-3 (Table 1).

The MANOVA analysis indicates that the main effect of emotional appeal ($F(8, 86) = 10.526$, $p < 0.001$; Wilk’s $\Lambda = 0.255$; partial $\eta^2 = 0.495$) and gender ($F(4, 43) = 6.92$, $p < 0.001$; Wilk’s $\Lambda = 0.608$; partial $\eta^2 = 0.392$) was statistically significant.

The interaction effect of the type of emotional appeal and gender was also significant ($F(8, 86) = 13.323$, $p < 0.001$; Wilk’s $\Lambda = 0.199$; partial $\eta^2 = 0.553$). As initially assumed, this interaction also exerted a statistically significant effect on all emotions. In order to test the moderating effect of gender on emotional responses, planned contrasts were performed (Fig. 1).

The findings reveal that in the case of the aggressive ad females express more sadness ($p < 0.001$; Fig. 1b), anger ($p < 0.001$; Fig. 1c), and fear ($p < 0.001$; Fig. 1d) than males, while males express more happiness than females ($p < 0.001$; Fig. 1a). Hence, hypothesis H1 is supported. When exposed to the warm ad, females express higher levels of happiness than males ($p < 0.001$; Fig. 1a), while no statistically significant differences were reported between genders on negative

Table 1 Descriptive statistics, mean (Standard Error) scores of manipulation measurements and dependent variables

Dependent variables		Emotional Appeal	M	F	p-value	F—statistic
Happy	SR	Aggressive	2.79 (0.2)	1.17 (0.2)	<0.001	$F(2, 46) = 44.734$, $p < 0.001$
		Warm	1.54 (0.22)	3.87 (0.23)	<0.001	
		Non-emotional	1.42 (0.21)	1.13 (0.23)	0.362	
Sad	SR	Aggressive	0.94 (0.11)	1.79 (0.11)	<0.001	$F(2, 46) = 10.833$, $p < 0.001$
		Warm	0.98 (0.12)	1.11 (0.13)	0.489	
		Non-emotional	1.07 (0.11)	0.91 (0.12)	0.357	
Angry	SR	Aggressive	0.95 (0.11)	2.31 (0.11)	<0.001	$F(2, 46) = 26.060$, $p < 0.001$
		Warm	0.94 (0.12)	1.13 (0.13)	0.289	
		Non-emotional	1.06 (0.11)	0.89 (0.12)	0.333	
Fear	SR	Aggressive	0.98 (0.12)	1.72 (0.12)	<0.001	$F(2, 46) = 6.509$, $p = 0.003$
		Warm	0.95 (0.13)	1.07 (0.13)	0.528	
		Non-emotional	1.02 (0.12)	0.95 (0.13)	0.687	
Happy	FE	Aggressive	0.094 (0.03)	0.118 (0.03)	0.584	$F(2, 46) = 10.793$, $p < 0.001$
		Warm	-0.013 (0.04)	0.299 (0.04)	<0.001	
		Non-emotional	0.012 (0.03)	0.044 (0.04)	0.522	
Sad	FE	Aggressive	0.012 (0.01)	0.058 (0.01)	0.008	$F(2, 46) = 2.981$, $p = 0.061$
		Warm	0.028 (0.01)	0.014 (0.01)	0.472	

(continued)

Table 1 (continued)

Dependent variables		Emotional Appeal	M	F	p-value	F—statistic
		Non-emotional	0.008 (0.01)	0.02 (0.01)	0.529	
Angry	FE	Aggressive	0.174 (0.03)	0.111 (0.03)	0.176	$F(2, 46) = 2.319$, $p = 0.11$
		Warm	0.046 (0.04)	-0.024 (0.04)	0.202	
		Non-emotional	-0.031 (0.03)	0.047 (0.04)	0.151	
Fear	FE	Aggressive	0.001 (0.0)	0.003 (0.0)	0.220	$F(2, 46) = 0.341$, $p = 0.713$
		Warm	0.002 (0.0)	0.006 (0.0)	0.095	
		Non-emotional	0.001 (0.0)	0.002 (0.0)	0.609	

Note. All scale-items were on a 5-point Likert scale; SR—Self-report; FE—Facial Expressions, M—Males, F—Females

emotions ($ps > 0.29$). Therefore, H2 is partially supported. No statistically significant differences were reported between males' and females' emotional reactions for the non-emotional ad ($ps > 0.33$). Hence, hypothesis H3 is supported.

As far as the analysis of facial expressions is concerned, the interaction effect of the type of emotional appeals and gender also exerted a statistically significant effect on happiness ($F(2, 46) = 10.793$, $p < 0.001$) and sadness ($F(2, 46) = 2.981$, $p = 0.061$; Table 1). Specifically, when exposed to the warm ad, females show higher levels of happiness ($p < 0.001$; Fig. 2a), whereas when exposed to the aggressive ad they demonstrate higher levels of sadness compared to males ($p = 0.008$; Fig. 2b). As a result, H4 is partially supported.

5 Discussion

In line with prior findings (Geuens and de Pelsmacker 1998; Swani et al. 2013), this study suggests that the main effects and the interaction effect of the type of emotional appeals and gender are statistically significant. Particularly, the research shows that an aggressive advertising appeal evokes higher levels of happiness

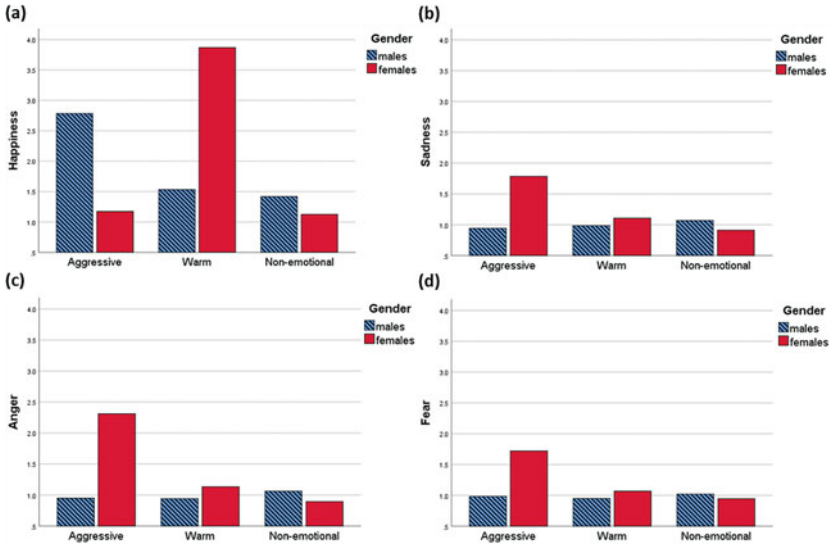


Fig. 1 Two-way interaction effects of self-report measurements (Hypotheses H1-3)

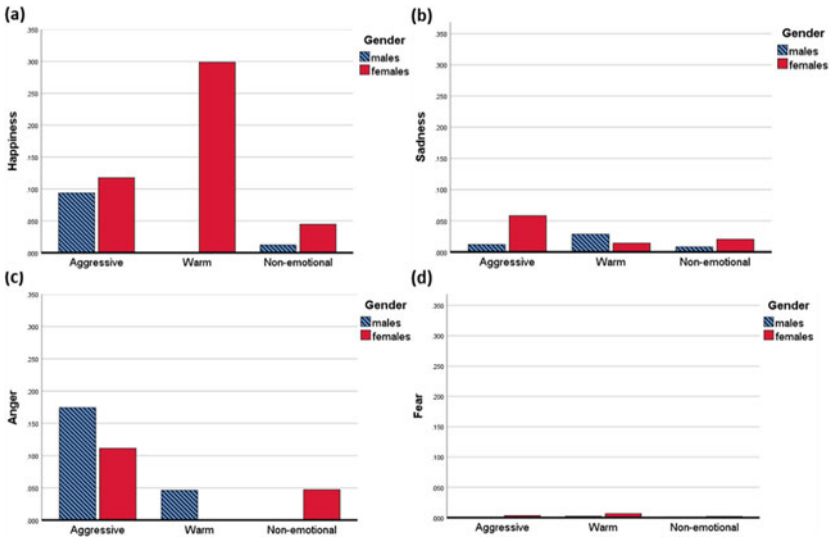


Fig. 2 Two-way interaction effects of facial expression analysis (Hypothesis H4)

and lower levels of sadness, fear and anger for males whereas a warm advertising appeal evokes higher levels of happiness for females. Similar to expectations, no significant differences were reported after participants' exposure to the non-emotional advertising appeal. Finally, the facial expression analysis revealed that males and females portray similar responses towards the advertisements except for women, who generated higher levels of happiness for the warm ad and higher levels of sadness for the aggressive ad. It is interesting that although several women reported negative emotions such as anger and fear for the aggressive advertisement, such emotions were not evident in their facial expression analysis. This difference could be interpreted from a social desirability viewpoint, that dictates gender appropriate responses that coincide with their sensitive, fragile nature and an aversion for violence and aggression.

The findings draw important managerial implications that could benefit the marketers' and advertisers' efforts to communicate with their target groups by highlighting the effectiveness of warmth and aggressiveness to evoke emotional reactions and by specifying these very emotions for men and women. In addition, the results indicate that aggressive appeals should be treated with caution if they are addressed to a female audience, as they instill negative affective responses and ultimately, may create a backlash against the sponsor of the message.

Further research could broaden the subject area and face some limitations of the present study. Considering that culture plays an important role affecting emotional expressivity, future research could recruit participants from different cultural backgrounds, enhancing the generalizability of the findings. Moreover, this study employed a small sample of participants and thus constitutes a modest beginning for the thorough understanding of the subject area that needs to be corroborated by studies with larger sample sizes.

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