The Role of Critical Thinking and Emotional Intelligence in Predicting the Advertising Believability

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ABSTRACT This paper aims at predicting the advertising believability, according to the dimensions of critical thinking (innovativeness, maturity, and engagement) and emotional intelligence. The methodology used in this paper is descriptive correlational method, and the population consists of the students of Islamic Azad University of Ghods City in 2015-2016, among whom 150 subjects were selected using multi-stage random sampling. Collecting data, we used Bar-On emotional quotient inventory test (1983), Ricketts' (2003) critical thinking disposition questionnaire, and Beltramini's (1982) advertising perceived believability scale. The results obtained by using the statistical indicators of Pearson correlation coefficient and multivariate regression show that two dimensions of critical thinking, i.e. innovativeness and maturity, can predict advertising believability in students. The emotional intelligence cannot predict it significantly. Generally, it can be said that there are various variables influential in predicting advertising believability, which should not be ignored in explaining this issue.
Key words: Believability, Advertising, Critical Thinking, Emotional Intelligence

Introduction

As influential ways in the society, media are a powerful tools in advertising (Vali Asl, 2014). By media, we mean people, tools, or situations by which the messages are transferred. In other words, media are ways to save and provide information or data. Advertising is a non-personal message used by the mass media to inform or persuade individuals to buy a product. Advertising can be regarded as a persuasive way realized by the media, and hence, it depends closely on the media. As the media are inseparable parts of a communication process, advertising cannot be unconnected to the media (Aqazade, RoushandelArbatani, and BaniFazel, 2015). Todays, advertising is closely connected to the human's life. In this regard, it continues to its life as long as it is needed; an industrialized and developed community cannot survive without advertising. Advertising is the most powerful tool in introducing a corporate, product, service, thought, or view. In case that the advertisements are useful and impressive, they can create an image in the audience or at least, make him/her to believe that product and label (Radfar and Shahabi, 2015). In this context, this paper is going to study the effective factors on advertising believability. Once a product is introduce by advertising and one sees the others use it, some, the impulsive ones, may buy that product, due to the collective impact. Though, having no control on their thoughts, all may be influenced by false information of advertisement, some are more affected (Berger, 2014). Emotional intelligence is characterized by directional social skills and attributes and behaviors (Extermera and Rey, 2016). Emotional intelligence ability is a set of interconnected cognitive and emotional abilities that help one to know, through understanding, evaluating, and expressing emotions, about the feelings contributing to facilitate thinking and decide rationally and logically by balancing emotions and thoughts. Moreover, one can use emotional intelligence to direct thoughts and communication with others by controlling emotions and thoughts of his own and the others (Mafi and Asefzade, 2014). The literature shows that Emotional intelligence and its components such as flexibility and social responsibility are closely connected with crtical thinking (Sudmandafshar and Rahimi, 2014). Warnick and Inch (1994; as quoted by Carter, Creedy, and Sidebotham, 2016) defined critical thinking as the ability of evaluating a problem, question, or situation, integrating all the available information about that issue, and reaching a solution or hypothesis and justifying a situation. Critical thinking is considered as an essential cognitive process to develop and benefit from knowledge, which is used for solving the problems and making decisions in any context, i.e. social, clinical, ethical, managerial, or political (Gall et al, 2010). Generally speaking, anyone has experienced the conflict

between emotion and logic. However, such an experience can be seen more in encountering with an advertisement but one hardly is able to realize that his/her emotions and logic are in conflict. Emotional intelligence and critical thinking allow the consumers to compare the products logically and estimate the actual purchase, based on their real needs. In this regard, this main objective of the present study is answering this question if emotional intelligence and critical thinking have any role in predicting advertising believability?

Methodology
The population in this descriptive-correlational research consists of the students studying in Islamic Azad University of Ghods City in the academic year 2015-2016. Determining the sample size, we used this formula:$(N>50+ (8M) =50+8(11) =138)$ (Green, 1991; quoted by Van Voorhis and Morgan, 2007). Considering the risk of loss, 150 students were selected by using the multivariate random sampling; two colleges were randomly selected and then, two majors from each, and finally, two classes from each major.

Research Tools
Bar-On emotional quotient inventory test. This inventory (1983) includes 117 questions and 15 subscales of emotional self-awareness, assertiveness, self-regard, self-actualization, independence, empathy, social responsibility, reality testing, interpersonal relationship, flexibility, problem-solving, stress tolerance, impulse control, optimism, and happiness, which are organized in a 5-option Likert scale (5=totally agree, 1=totally disagree). This inventory has been edited by Dehshiri on Iranian students and the clauses reduced to 90, and the validity of this inventory, through calculating Cronbach's Alpha, is reported as 0.74 and 0.68 for the male and female students, respectively, and for all the subjects as 0.93 (FathiAshtiani, and Dastani, 2011). The exploratory factor analysis was used to calculate the validity of this inventory; eight factors were reliable for the Iranian subjects. Cronbach's alpha in this study was 0.90.
Critical Thinking Disposition Questionnaire. Ricketts' critical thinking disposition questionnaire consists of 33 questions and 3 subscales of innovativeness, maturity, and engagement, which are organized in a 5-option Likert scale (1=totally disagree, 5= totally agree). Ricketts (2003, quoted by Safari, Pasdar, and Darbandi, 2011) reported the reliability of the subscales of innovativeness, maturity, and engagement as 0.75, 0.57, and 0.86, respectively. Moreover, the structural validity of this questionnaire has been confirmed in the Ricketts' (2003; quoted by Safari et al, 2011) research. Pakmehr, Mirdouraghi, GhanaeeChamanabad, and Karami (2013) used the confirmatory factor analysis and showed that all the extracted loaded factors are higher than 0.40 and the distribution of materials in subscales correspond with the original test. They reported the Cronbach's alpha coefficient for this tool as 0.68. In the present study, the Cronbach's alpha coefficient is 0.87.
Beltramini's (1982) advertising perceived believability scale. This scale has 10 pairs of bipolar attributes arranged in a 5-option Likert scale. Beltramini and Ivans (1985) reported the Cronbach's alpha coefficient as 0.94, and the average correlation coefficient as 0.66 between the items of this scale as an indicator of acceptable convergent and diagnostic validities. The Cronbach's alpha coefficient in the present study is 0.84.
Procedure
Going to the colleges and providing the lists of classes and selecting the classes and obtaining permission from the professors, the students were asked to answer the questions in groups. The balancing solution was used to avoid possible bias in answering the questions, and reinforcing the credibility of the collected results. Also, we changed the order of presenting the questionnaires, we tried to balance the validity of answers. The informed consents were obtained and the students were assured the answers keep confidential. Analyzing data, we used the multiple regression analysis method.

Results
94 women (62.66%) and 56 men (37.34%) participated inthis study. The average age of women was 22.26 and the standard deviation was 1.92. The average age of men was 21.92 and the standard deviation was 2.76. 46 subjects (30.67%) were masters students and 104 (69.33%) were bachelor students.

Table 1. The means, standard deviations, skew nesses and kurtoses of variables

Variable	Mean	Standard deviation	Skewness	Kurtosis
Innovativeness	35.99	8.41	0.062	-0.667
Maturity	26.62	6.31	0.008	-6.696
Engagement	41.95	7.86	-0.242	0.004
Emotional intelligence	245.43	36.51	-0.503	0.013
Believability of advertising	22.19	7.86	-0.38	0.602

Table 1 shows that the indicators of skewness and kurtoses of no factor passed ±2. It should be noted that some believe that skewness and kurtoses should be between +2 and -2 so that the data can be distributed at the level of 0.05 normally. However, some consider this range between +3 and -3 (Kline, 2005). In this context, it can be said that the distribution of data for each of the variables is normal.

Table 2. Summary of Pearson Correlation Coefficient test among the variables

Variables	Advertising Believability
Emotional intelligence	0.070
Innovativeness	-0.042
Maturity	0.150*
Engagement	0.114
Critical thinking	0.079

According to the obtained coefficients, it can be concluded that there is no significant relation between the innovativeness and engagement and advertising believability in students ($p>0.05$). Only the variable of maturity has a significant relation with advertising believability (P 0.05). Evaluating whether the hypothesis of normality of multivariate distribution is true, we used the data from "Mahalanobis Distance". Since the scores of four subjects with numbers 59, 67, 101, and 102 were greater than the Chi-square criterion with freedom degree of 4 in alpha p 00.1, they as multivariate outlier values were excluded from the analysis. Therefore, the hypothesis of normality of multivariate distribution in the data is accepted.

Table 3. Summary of regression coefficients

Predictors	B	SE	S	T	Sig	Tolerance	VIF	Durbin-Watson
The first stage								
Constant number	17.773	3.729		4.766	0.01			1.57
Engagement	0.082	0.112	0.080	0.735	0.463	0.556	1.799	
Maturity	0.343	0.152	0.275	2.248	0.026	0.443	2.260	
Innovativeness	0.247	0.102	-0.267	-2.415	0.017	0.541	1.848	

F=3.108, adjusted R^2 =0.042, R=0.248, DF=3.142

Table 4. Summary of regression coefficients

Predictors	B	SE	S	T	Sig	Tolerance	VIF	Durbin-Watson
The second stage								
Constant number	14.296	3.729		2.237	0.01			1.57
Innovativeness	-0.228	0.106	0.278-0.246	-2.142	0.034	0.502	1.992	
Maturity	0.3479	0.153	0.073	2.271	0.025	0.442	2.264	
Engagement	0.075	0.113	0.058	0.664	0.508	0.502	1.817	
Emotional intelligence	0.012	0.018		0.671	0.504	0.882	1.133	

Sig=0.504, adjusted R^2 =0.065,   F=0.450, R^2 =0.038,   R=0.254, DF=1.141, R^2 =0.003

One assumption in regression is independence of errors, i.e. the difference between the actual values and the values predicted by the regression equation. Durbin-Watson test is used to review the independence of errors. According to the statistic (1.490) of Durbin-Watson in the last column of Table 4, it places between the allowed distances of 1.5 to 2.5 and hence, the hypothesis of correlation between the errors is rejected; that is, the errors are not correlated and we may use regression. Lack of multicolinearity between the independent collinear variables shows a situation in which an independent variable is a linear function of other independent variables. The results of collinearity test are shown in the sixth and seventh columns of Table 4 as tolerance and VIF. Tolerance is the percent of variance in a predictor, which cannot be explained by other predictors. When tolerance approached zero, there is a large multicollinearity and the standard error of the regression coefficient will be great. The tolerance values in the above table show that none of the tolerance values approaches zero, there would be no problem in regression analysis. The factor of tolerance inflation is the reverse of tolerance and if it is increased (greater than 2), it causes increased regression coefficient and makes the prediction difficult. The values of the inflation factor of variance tolerance indicate that none of the indicators are greater than 2. Hence, there is no problem in using the linear regression. As Table 3 shows, the dimension of critical thinking (innovativeness, engagement, and maturity) that were included in the equation of predicting advertising believability at the first stage can significantly predict advertising believability (F=3.108, DF=3.142, Sig=0.028). Multiple correlation coefficient value (R^2) is 0.062, indicating that the components of critical thinking can explain the variance of advertising believability by 6.2%. The regression coefficients show that the dimensions of maturity and innovativeness can predict advertising believability at the significance levels of 0.02 (=0.275, p 0.05) and 0.01 (=0.267, p 0.01), respectively. In contrast, the regression coefficients of engagement was not significant at the significance level of 0.05. According to the results shown in Table 4, when the emotional intelligence is included in the equation in the second stage, the value of R^2 reduced to 0.038. It reveals that 3.8% of the believability variance is explained when the emotional intelligence is included in the equation. The value of changes is R^2= 0.003. These results show that inclusion of emotional intelligence can explain the believability at 0.3% that is not significant.

Discussion and Conclusion
The dimensions of innovativeness and maturity, among other dimensions of critical thinking, predict advertising believability in students. Emotional intelligence cannot significantly predict advertising believability. These results are in line with the results by Gall et al (2010) who showed that people with high critical thinking ability are flexible in accepting new ideas. Regarding the explanation of predicting advertising believability based on the component of maturity, the cognitive psychologists define critical thinking as decision and judgement. Critical thinking includes interpreting, analyzing, evaluating, explaining, self-regulating, and deduction (Pakmehr et al, 2013). Critical thinking requires true information; in fact, information is the main component of critical thinking. Information can be organized, classified, compared, and evaluated by critical thinking. Information is valuable when it changes to knowledge that is helpful for the ability to invent (Amirpour, 2012). Consumer's behavior is formed of knowledge and information about purchases one may have through comparing and evaluating by critical thinking and maturity. Consumers behave based on their needs, expectations, and desires as well as by processing the information gathered from the environment; what leads consumers to show a behavior understands the information gathered through views and attitudes (Derakhshanian, 2014). Regarding the negative relation between advertising believability and innovativeness, it can be said that today new and various ways are used in advertising; that is, there could be found the element of change in advertising (GhasempourHenji, 2013). Creative people, unlike those reluctant to create, do not follow the old ideas but these people have their own ideas, styles and views. They are not obedient to a higher official and influential people and do not follow the others but they decide based on their beliefs and the logic over the issues. This is probably due to the negative relation between innovativeness and advertising believability because the creative people do not follow the others but they have their own beliefs and views, and therefore, they are hardly influenced by others and advertisements (Nusbaum and Silvia, 2010). Pertaining to the impacts of advertisements by the media on emotional intelligence, it can be said that people learn voluntarily or involuntarily from the media provided that the media can attract them. The power of media depends in part on the way of communication and to some extent on the issue, form, and educational purposes (Aghazade et al, 2015). Sometimes, people are more influenced by the advertisements with impact on their motivational aspects; for example,

purchasing goods to help patients with incurable diseases (Bradbury and Graves, 2013) and the results of the present study confirm this matter that consuming aspect of advertisement has an inverse effect on emotional intelligence.

Too much information does not increase the consumers' awareness but acquiring information requires obtaining the capabilities and features to use the new world information; only those who evaluate things critically can get on (Sheikh Munesi et al, 2012). Generally, there are different effective factors on advertising believability, which should not be ignored. Any research is trying in nature to find the relations between factors and the magnitude of their impacts on each other. However, there are usually limitations in any research that may make problems and challenge generalizing the results. The present study is not an exception. The limitations of this study that was performed as a cross-sectional research are limitation in interpretations and causative factors of the studied variables, which should be considered.

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