

The Impact of Electronic Advertising on the Cereal Importers' Decision to Buy

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Abstract
The purpose of this study was to investigate the effect of electronic advertising on the cereal importers' decision to buy. The present research is a causal descriptive-survey study and an applied study regarding the purpose. The statistical population of the present study is comprised of cereals importers in the first six months of the year 2016, which consist of 202 companies. Sample size was obtained through Cochran formula as 132, and then the questionnaire is distributed through random and classical sampling. The data was collected using two questionnaires: the pre-designed questionnaires was for evaluating electronic advertisement including 4 components and 20 questions, and a researcher-made questionnaire based on Philip Cutler's purchase decision theory to assess purchasing decision and consisted of 4 components, with 47 items. Both of the questionnaires were based on the five-degree Likert spectrum and their reliability was measured using the Cronbach's Alpha coefficient. The data collected through the questionnaire was entered into the spss19 software system. For the inferential statistics of variables to statistically analyze the data, different statistical tests including Kolmogorov-Smirnov test and Pearson correlation test and linear regression were used. The results of the research indicated that electronic advertising has a positive and significant effect on the decision making of cereal importers' purchase. Also, the dimensions of electronic advertising including banner, e-mail, web site, and search engines have a positive and significant effect on shoppers' e-shopping decision.
Keywords: electronic advertising, banner, e-mail, web site, search engines

1. Introduction

With the increasing expansion of the Internet, companies from different industries are increasingly considering using electronic marketing to gain competitive advantage. Internet has become a major driver of change in many traditional sectors. The speed of Internet influence in the world, along with the widespread advances in the use of information technology in business and industry, has led many literature on the various aspects of e-business and e-marketing. Various companies in the private and public sectors have focused on electronic potential for growth, and now almost all developing countries are implementing a national program for the development of information technology.

One of the challenges facing Iran's cereal production is climate change and water resources decline, and grain production is predicted to decline by 10% over the next 25 years. Bread as the main food for Iranians does not have any alternative. 72% of wheat in Iran is consumed in bakery considering the taste of Iranians and the predction of population increase, we will need 20 million tons of wheat per year after a decade. Also, imports of other cereals including barley and maize ... also have a high percentage of imports. Iran is considered as one of the largest grain importers in the world. It is almost the third largest wheat importer in the world, and the imports are mainly from the Baltic countries and Germany. Therefore, considering that the main food of Iranians is cereals and wheat, and considering the fact that the capacity of domestic products is very low, imports are of great importance. Cereal importers are faced with several options to make decisions on purchase, because the merchants are waiting to enter this competitive market in Iran. The main issue in this study is: considering the many options for purchasing cereals for domestic merchants and the importance of deciding to import good and high quality cereals, importing inappropriate cereals can impose irreparable damage on the health of the community since it is directly linked to human life and health. In this regard, a variety of factors can play an optimal role in the purchasing decision of merchants, including the use of the e-market, namely e-advertising and e-business. With the help of the Internet, the domestic merchants can evaluate advantage and disadvantages of the purchase options better than the traditional market in short time, and save time and money and ultimately make a better purchase. Considering that research on the subject are less within the country, the need to examine the effects of electronic advertising on purchasing is observed.

2. Previous Research

Ying Wang et al. (2009) conducted a study entitled as "testing the beliefs and attitudes toward online advertising among Chinese customers with the aim of testing attitude towards online advertising (ATOA) among Chinese consumers, and finding the relationship between belief factors, ATOA and consumer responses to online

advertising to find and evaluate online marketing programs accurately on a sample of students from a major university in the capital of China, because in past research, the focus was on America and other developed countries. But in this research, Chinese customers are investigated who in the past three decades, have had the highest economic growth than any country in the world. Compared to Western developed markets such as the United States, online advertising is relatively new in China, but online advertising is increasing in China, and this has provided opportunities for global markets to reach millions of target customers. Although online advertising formats are diverse in China, website advertising has a single format and has a larger share of profits than other types of online advertising. But there are also problems along with the amazing growth of these advertisements in China.

Boudreau and Watson (2006) conducted a research on the alignment of electronic advertisement strategies, because the Internet network could have an impact on customer engagement and it is essential to evaluate the relationship between advertising on the Internet and the company's strategy. This study suggests multinational organizations with the most complex organizing environment to be concerned about the alignment of corporate strategy and advertising on the Internet due to their geographical extension, and for the 20 multinational organizations that have 11 companies in Europe, 3 companies in Asia and 6 companies in North America, the relationship between the global strategy of the company and the electronic advertisement strategy were tested and they concluded that this alignment doesn't exist for more than half of these companies.

Dennis Duffy (2005) conducted a research on referral marketing and its impact on e-commerce, and concluded that creative online marketers could be representatives of selling thousands of online products and earn significant revenue as a percentage of sales, and the key to marketing success is to create an appropriate win-win relationship between the owner and the marketer, and this marketing will change into a major stream in e-commerce in the future.

In an article titled "Using the Internet in E-marketing," Omidwar Abraqoui (2013) states: "E-marketing should be in line with the overall marketing plan of the organization, which is can be achieved through assessing the strengths and weaknesses of the organization and the proper recognition of opportunities and threats. Internet marketing has a variety of ways, including affiliate marketing, interactive marketing, email marketing, and so on, and it shows the scope and importance of using the Internet. In this paper, electronic marketing, the difference between traditional marketing and new marketing, the impact of the Internet on marketing mix, benefits and limitations of e-marketing and types of e-marketing has been briefly outlined.

In a paper entitled, "The effect of Internet existence components in the marketing field", Jahani Behtamiri and Rahdar (2013) emphasize the need for the market to define the key elements of that area. The creation of a new concept of marketing entitled as "Internet Marketing" under the guise of a relationship marketing philosophy that focuses on meeting the individual needs of customers, creating value for the customer, and developing a communications and interconnection network between companies and individuals, is the result of this view. The purpose of this study is to prioritize the mixed marketing elements using the AHP technique. The results of the research indicate that price, product, communication and distribution have the importance order of first to fourth in prioritizing the marketing mixes and in prioritizing the options, price based on quality, price based on perceptual value, brand, sales promotion, price based on cost, price based on electronic intermediary, after sales service, entertainment and attractiveness, are among the most important factors in electronic marketing mixes and have acquired more weight regarding importance.

Hamidizadeh and Yazdani (2011), in an article entitled "A strategic model of effective consumer behavior electronic advertisement", found that Internet advertising, which is now rapidly expanding and growing, has features and capabilities that if properly recognized and used effectively, in addition to increasing effectiveness and impact of consumer behavior, it can be very effective in reducing the high costs of traditional advertisements, and companies can easily achieve the objectives of promoting sales and affecting the opinions, emotions, attitudes and consumer behavior.

Faraz (2011) in a study entitled "The effect of online advertising on the purchasing behavior of Iranian consumers and providing solutions to improve it." the results indicate that among the various advertising methods, only websites and search engines affect the purchasing process, and the rest do not affect the purchasing process.

3. Methodology

3.1. Data Analysis

3.1.1. Testing the Normality of Variables

The Kolmogorov-Smirnov test was used to study the normal distribution of the main variables. The test results are presented in the table below.

Table 1. Testing the normality of the main variables of the research

Variable	Kolmogorov-Smirnov statistics	P-value *
Electronic advertising		
E-mail	1.188	0.119
Website	1.232	0.096
Banner	1.539	0.018
Search engines	1.309	0.065
Total score	0.921	0.364
Importers' decision to purchase		
Total score	1.109	0.171

*p-value (significance)

Before interpreting the results of Table 1, it is necessary to note that if the P-value of the variables exceeds the significance level of 0.05, then it can be concluded that the distribution of that variable is normal. Therefore, with regard to this point, the results of the output of Table 1 indicate that the P-value for the Kolmogorov-Smirnov test in the scores of all variables is greater than 0.05, so it is concluded that the distribution of all variables is normal. Therefore, a parametric test is used to test the research hypotheses.

3.2. Investigating the Research Hypotheses

3.2.1. The main hypothesis of the research

Electronic advertisement has a significant relationship with purchasing decision of cereal importers.

In order to investigate the above relation – considering the distance between the two variables of electronic advertising and purchasing decision of importers – Pearson correlation test was used. The table below indicates the results of the correlation test between electronic advertisements and purchasing decision of importers.

Table 2. Pearson correlation test of two variables between electronic advertisements and purchasing decision of importers

Importers' decision to purchase		
Electronic advertisement	Pearson Correlation Coefficient	0.933
	Significance level of correlation	0.000
	The total number of respondents	132

According to the results (r = 0.933 and 0.000), the research hypothesis has been confirmed. Therefore, electronic advertising has a significant relationship with the grain importers' decision of purchasing in the country.

To investigate and present the regression model of the dependent variable, the importers' decision to purchse (Y) and the predictive (independent) variable of the electronic advertisement (X), after examining the adequacy of the model is indicated in the tables below, we will present the fitted model.

Table 3. Adequacy index of the importers' purchase decision model and electronic advertisements

Correlation coefficient	Coefficient of determination	Adjusted coefficient of determination	Standard deviation of error
0.933	0.870	0.869	19.413

In Table 3, with respect to the positive value of the correlation coefficient (r = 0.933), it can be concluded that by increasing the score of electronic advertising, the decision rate of importers' purchases also increases. Also, the coefficient of determination has been obtained as 0.870, which indicates that the electronic advertising variables account for nearly 90% of the changes in the decision making process of importers' purchases.

The following table indicates the significance of regression by F test.

Table 4. Analysis of variance test for the significance of importers' purchase decision model and electronic advertisements

Model	Sum of squares	Degree of freedom	The average sum of squares	F statistic	P-value
Regression	329166.884	1	329166.884	873.406	0.000
Remaining	48994.047	130	376.877		
Total	378160.932	131			

Considering that in table 4, the P-value is less than the significance level of 0.05, therefore, it shows the significance of the regression model of importers' purchase decision and electronic advertisements.

Table 5. Simple regression results to predict importers' purchase decision through electronic advertisements

The predictive variable	The criterion variable	B	SE	Beta	t	P-value
Electronic advertisements	The importers' purchase decision	2.027	0.069	0.933	29.553	0.000

B: Non-standard regression coefficient

Beta: Standard regression coefficient

In Table 5, looking at the regression coefficients (standard and non-standard) and P-value imply that

electronic advertisement can predict the importers' purchase decision. In other words, electronic advertisement has a significant relationship with the grain importers' purchase decision in the country (P <0.05). Therefore, the main hypothesis of the research is confirmed.

3.2.2. Sub-hypotheses:

The first hypothesis:

The e-mail component has a significant impact on Iranian importers' purchase decision.

In order to investigate the above relation - considering the distance between the two variables of e-mail and importers' purchase decision – the Pearson correlation test was used. The table below indicates the results of the correlation test between e-mail and the importers' purchase decision.

Table 6. Pearson correlation test of two variables between e-mail and importers' decision to purchase

Importers' decision to purchase		
E-mail	Pearson Correlation Coefficient	0.922
	Significance level of correlation	0.000
	The total number of respondents	132

According to the results (r = 0.922 and 0.000), the research hypothesis has been confirmed. Therefore, e-mail has a significant relationship with the grain importers' decision of purchasing in the country.

To investigate and present the regression model of the dependent variable, the importers' decision to purchse (Y) and the predictive (independent) variable of the e-mail (X), after examining the adequacy of the model is indicated in the tables below, we will present the fitted model.

Table 7. Adequacy index of the importers' purchase decision model and e-mail

Correlation coefficient	Coefficient of determination	Adjusted coefficient of determination	Standard deviation of error
0.922	0.850	0.849	20.902

In Table 7, with respect to the positive value of the correlation coefficient (r = 0.922), it can be concluded that by increasing the score of e-mail, the decision rate of importers' purchases also increases. Also, the coefficient of determination has been obtained as 0.850, which indicates that the e-mail variables account for nearly 90% of the changes in the decision making process of importers' purchases.

The following table indicates the significance of regression by F test.

Table 8. Analysis of variance test for the significance of importers' purchase decision model and e-mail

Model	Sum of squares	Degree of freedom	The average sum of squares	F statistic	P-value
Regression	321362.230	1	321362.230	735.529	0.000
Remaining	56798.702	130	436.913		
Total	378160.932	131			

Considering that in table 8, the P-value is less than the significance level of 0.05, therefore, it indicates the significance of the regression model of importers' purchase decision and e-mail.

Table 9. Simple regression results to predict importers' purchase decision through e-mail

The predictive variable	The criterion variable	B	SE	Beta	t	P-value
E-mail	The importers' purchase decision	8.461	0.0312	0.922	27.121	0.000

B: Non-standard regression coefficient

Beta: Standard regression coefficient

In Table 9, looking at the regression coefficients (standard and non-standard) and P-value imply that e-mail can predict the importers' purchase decision. In other words, e-mail has a significant relationship with the grain importers' purchase decision in the country (P <0.05). Therefore, the first hypothesis of the research is confirmed.

The second hypothesis:

The component website has a significant impact on Iranian importers' purchase decision.

In order to investigate the above relation – considering the distance between the two variables of website and importers' purchase decision – the Pearson correlation test was used. However, before the implementation of this test, the assumptions about the normality of the scores of the variables and the linearity of the relationship between the two variables were assured. The table below indicates the results of the correlation test between website and the importers' purchase decision.

Table 10. Pearson correlation test of two variables between website and importers' decision to purchase

Importers' decision to purchase		
Website	Pearson Correlation Coefficient	0.959
	Significance level of correlation	0.000
	The total number of respondents	132

According to the results (r = 0.959 and 0.000), the research hypothesis has been confirmed. Therefore, website has a significant relationship with the grain importers' decision of purchasing in the country.

To investigate and present the regression model of the dependent variable, the importers' decision to

purchse (Y) and the predictive (independent) variable of the website (X), after examining the adequacy of the model is indicated in the tables below, we will present the fitted model.

Table 11. Adequacy index of the importers' purchase decision model and website

Correlation coefficient	Coefficient of determination	Adjusted coefficient of determination	Standard deviation of error
0.959	0.920	0.920	15.217

In Table 11, with respect to the positive value of the correlation coefficient (r = 0.959), it can be concluded that by increasing the score of website, the decision rate of importers' purchases also increases. Also, the coefficient of determination has been obtained as 0.920, which indicates that the website variables account for nearly 99% of the changes in the decision making process of importers' purchases.

The following table indicates the significance of regression by F test.

Table 12. Analysis of variance test for the significance of importers' purchase decision model and website

Model	Sum of squares	Degree of freedom	The average sum of squares	F statistic	P-value
Regression	348055.005	1	348055.005	1502.932	0.000
Remaining	30105.927	130	231.584		
Total	378160.932	131			

Considering that in table 12, the P-value is less than the significance level of 0.05, therefore, it indicates the significance of the regression model of importers' purchase decision and website.

Table 13. Simple regression results to predict importers' purchase decision through website

The predictive variable	The criterion variable	B	SE	Beta	t	P-value
Website	The importers' purchase decision	7.915	0.204	0.959	38.768	0.000

B: Non-standard regression coefficient

Beta: Standard regression coefficient

In Table 13, looking at the regression coefficients (standard and non-standard) and P-value imply that website can predict the importers' purchase decision. In other words, website has a significant relationship with the grain importers' purchase decision in the country (P <0.05). Therefore, the second hypothesis of the research is confirmed.

The third hypothesis:

The component banner has a significant impact on Iranian importers' purchase decision.

In order to investigate the above relation – considering the distance between the two variables of banner and importers' purchase decision – the Pearson correlation test was used. The table below indicates the results of the correlation test between banner and the importers' purchase decision.

Table 14. Pearson correlation test of two variables between banner and importers' decision to purchase

Importers' decision to purchase		
Banner	Pearson Correlation Coefficient	0.876
	Significance level of correlation	0.000
	The total number of respondents	132

According to the results (r = 0.876 and 0.000), the research hypothesis has been confirmed. Therefore, banner has a significant relationship with the grain importers' decision of purchasing in the country.

To investigate and present the regression model of the dependent variable, the importers' decision to purchse (Y) and the predictive (independent) variable of the banner (X), after examining the adequacy of the model is indicated in the tables below, we will present the fitted model.

Table 15. Adequacy index of the importers' purchase decision model and banner

Correlation coefficient	Coefficient of determination	Adjusted coefficient of determination	Standard deviation of error
0.876	0.768	0.766	25.989

In Table 15, with respect to the positive value of the correlation coefficient (r = 0.876), it can be concluded that by increasing the score of banner, the decision rate of importers' purchases also increases. Also, the coefficient of determination has been obtained as 0.768, which indicates that the variable of banner accounts for nearly 80% of the changes in the decision making process of importers' purchases.

The following table indicates the significance of regression by F test.

Table 16. Analysis of variance test for the significance of importers' purchase decision model and banner

Model	Sum of squares	Degree of freedom	The average sum of squares	F statistic	P-value
Regression	290351.621	1	290351.621	429.860	0.000
Remaining	87809.311	130	675.456		
Total	378160.932	131			

Considering that in table 16, the P-value is less than the significance level of 0.05, therefore, it indicates the significance of the regression model of importers' purchase decision and banner.

Table 17. Simple regression results to predict importers' purchase decision through banner

The predictive variable	The criterion variable	B	SE	Beta	t	P-value
Banner	The importers' purchase decision	7.395	0.357	0.876	20.733	0.000

B: Non-standard regression coefficient
Beta: Standard regression coefficient

In Table 17, looking at the regression coefficients (standard and non-standard) and P-value imply that banner can predict the importers' purchase decision. In other words, banner has a significant relationship with the grain importers' purchase decision in the country (P <0.05). Therefore, the third hypothesis of the research is confirmed.

The fourth hypothesis:

The component search engines has a significant impact on Iranian importers' purchase decision.

In order to investigate the above relation – considering the distance between the two variables of search engines and importers' purchase decision – the Pearson correlation test was used. The table below indicates the results of the correlation test between search engines and the importers' purchase decision.

Table 18. Pearson correlation test of two variables between search engines and importers' decision to purchase

Importers' decision to purchase		
Search engines	Pearson Correlation Coefficient	0.888
	Significance level of correlation	0.000
	The total number of respondents	132

According to the results (r = 0.888 and 0.000), the research hypothesis has been confirmed. Therefore, search engines have a significant relationship with the grain importers' decision of purchasing in the country.

To investigate and present the regression model of the dependent variable, the importers' decision to purchse (Y) and the predictive (independent) variable of the search engines (X), after examining the adequacy of the model is indicated in the tables below, we will present the fitted model.

Table 19. Adequacy index of the importers' purchase decision model and search engines

Correlation coefficient	Coefficient of determination	Adjusted coefficient of determination	Standard deviation of error
0.888	0.788	0.786	24.834

In Table 19, with respect to the positive value of the correlation coefficient (r = 0.888), it can be concluded that by increasing the score of search engines, the decision rate of importers' purchases also increases. Also, the coefficient of determination has been obtained as 0.788, which indicates that the variable of search engines accounts for nearly 80% of the changes in the decision making process of importers' purchases.

The following table indicates the significance of regression by F test.

Table 20. Analysis of variance test for the significance of importers' purchase decision model and search engines

Model	Sum of squares	Degree of freedom	The average sum of squares	F statistic	P-value
Regression	297985.029	1	277985.029	438.163	0.000
Remaining	80175.903	130	616.738		
Total	378160.932	131			

Considering that in table 20, the P-value is less than the significance level of 0.05, therefore, it indicates the significance of the regression model of importers' purchase decision and search engines.

Table 21. Simple regression results to predict importers' purchase decision through search engines

The predictive variable	The criterion variable	B	SE	Beta	t	P-value
Search engines	The importers' purchase decision	7.232	0.329	0.888	21.981	0.000

B: Non-standard regression coefficient
Beta: Standard regression coefficient

In Table 21, looking at the regression coefficients (standard and non-standard) and P-value imply that search engines can predict the importers' purchase decision. In other words, search engines have a significant relationship with the grain importers' purchase decision in the country (P <0.05). Therefore, the fourth hypothesis of the research is confirmed.

4. Conclusion

The main hypothesis of the research: Electronic advertisements have a significant effect on the Iranian grain importers' purchase decision. According to the results of Table 5 and the beta value of 0.933 and the obtained P-value of 0.000 it implies the positive effect of electronic advertisements on purchasing decisions, and the main hypothesis of the research is confirmed.

Sub-hypothesis 1: The e-mail component has a significant effect on Iranian importers' purchase decision. According to the results of Table (9) and the obtained beta value of 0.922 and the obtained P-value of 0.000 indicates the positive effect of e-mail on purchasing decision, and the main hypothesis of the research is

confirmed. This component is ranked second in terms of the importance of impact.

Sub-hypothesis 2: The component of the website has a significant effect on Iranian importers' purchase decision. According to the results of Table (13) and the obtained beta value of 0.959 and the obtained P-value of 0.000 indicates the positive effect of website on purchasing decision, and the main hypothesis of the research is confirmed. This component is ranked first in terms of the importance of impact.

Sub-hypothesis 3: The component of the banner has a significant effect on Iranian importers' purchase decision. According to the results of Table (17) and the obtained beta value of 0.876 and the obtained P-value of 0.000 indicates the positive effect of banner on purchasing decision, and the main hypothesis of the research is confirmed. This component is ranked fourth in terms of the importance of impact.

Sub-hypothesis 4: The component of the search engines has a significant effect on Iranian importers' purchase decision. According to the results of Table (21) and the obtained beta value of 0.888 and the obtained P-value of 0.000 indicates the positive effect of search engines on purchasing decision, and the main hypothesis of the research is confirmed. This component is ranked third in terms of the importance of impact.

Information technology continues to grow in the information age. By looking at global internet sales statistics, one of the major goals of companies is to establish appropriate and effective communications with customers through the Internet. Internet sales reduces costs and shortening of the distribution channel, and if companies can push buyers to electronic purchases, they will lead to increased profits in the future.

Hamidizadeh and Yazdani (2011) concluded in their research that electronic advertisemnts has a positive effect on the behavior of buyers. Faraz (2011) concluded in his study that among the various types of internet advertisement techniques, only website and the search engines affect the behavior of buyers.

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