

[DOI: 10.20472/IAC.2015.016.068](https://doi.org/10.20472/IAC.2015.016.068)

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FACTORS AFFECTING THE ELECTRONIC EXCHANGE OF DATA THROUGH VIRAL MARKETING (CASE STUDY: E-COMMERCE USERS IN RASHT CITY-NORTHERN OF IRAN)

Abstract:

The purpose of this study is the factors affecting the electronic exchange through viral marketing. Methods According to the research objectives is applied researches and the method of collecting data is field and according to the survey research is conducted. The sample comprised Rasht e-commerce users. The sample size of 384 was calculated by using simple random sampling. The instrument used to collect the required data, is questionnaire that its validity and reliability was calculated by validity method of content and determined reliability by Cronbach's alpha and were distributed after modifying questions and multiple regression analysis was used to test the hypotheses of this study, and collected data was analyzed by SPSS software. According to the research main question that factors such as capturing images, targeting resources, combining technology, ease of use of the product, needs to be part of a group, need to be different and altruism can be effective in use viral marketing, all hypotheses are confirmed.

Keywords:

Viral Marketing, Electronic exchange, E-Commerce, Users of e-commerce.

JEL Classification: M31, M00, M30

1. Introduction

Today, the development of communication technologies and their increasing use in business has a huge impact on the marketing of goods and services. Meanwhile, the Internet is one of the media that has influenced the process of implementing business strategies, especially marketing and has created new areas in the field of e-commerce, online advertising, e-marketing, etc. (Gholmohammadi, 2013). De Bruyn & Lilien (2008) stated that the development of the Internet, lead to the increasing importance of the electronic recommendation of a person to another person and consumers, fully consider other consumers' comments, when shopping on the Internet and automatically involved in a phenomenon known as electronic word of mouth advertising. This new type of marketing communications in an online environment called viral marketing, the goal is to promote the brand of the product (Moradi & Alipour Darvish, 2012). Viral marketing, is a mouth transmission of a message by individuals that in this manner, some of the company's marketing message, brand or products provided through public media tools (usually the Internet) are widely spread among the general population (Kaplan & Haenlein, 2011). However, some researchers describe it in the form of word of mouth advertising that consumers do it for other customers of goods and services (Du Plessis et al, 2012). The importance of viral marketing for businesses is targeting customers who are able to influence others. Because these clients have increased the efficiency of spread the viral message across the network marketing associations (Gohari & Mohammadi, 2014). The various elements of this type of marketing is still unknown despite the increasing popularity of this type of marketing model (Moradi & Alipour Darvish, 2012). The studies in the literature wealth of local and Iranian companies to improve email marketing become necessary. The present study tried to investigate the factors influencing the use of this type of marketing among internet users in the country due to the importance of viral marketing and considering the evidence and success stories of many foreign companies use this type of marketing. So the main research question in this case can be expressed as what factors influence the use of viral marketing among Internet users in the country?

2. Literature Review

Today, e-commerce is an evolving revolution in the buying and selling of people and benefits from the investment and research in the field of e-commerce have income for people, especially the private sector (Baghaei & Moghadasi, 2007).

E-commerce is a general name for a range of applications and systems which provide services such as information search, mobility management, check the status of credit, credit, payment on line, reporting and management of account on Internet (Taleghani, 2011). Offering a new way of doing business is the purpose of the application of e-commerce. In this way, traders are able to work full-time and

offering their products and services to buyers all over the world-regardless of borders and nationalities (Taleghani, 2011). Many people knows E-commerce limited to buying and selling through the Internet while this constitutes only a small part of e-commerce and this concept now is taken a wide range of commercial and economic aspects. It is not difficult, for any commercial and financial activities between institutions and individuals will be included in the e-commerce environment (Dehghani, 2010).

Viral marketing is an advanced network-mouth (Jurvesto and Tim Draper, 2004). In other words, viral marketing is a pathogen with the help of a host cell that distribute and multiply (Alipour & et al, 2011). Viral marketing, is a mouth transmission of a message by individuals that in this manner, some of the company's marketing message, brand or products provided through public media tools (usually the Internet) are widely spread among the general population (Kaplan & Haenlein, 2011).

To increase the potential success of a viral marketing campaign, a number of factors must be considered that these factors can be paraphrased as: Viral marketing requires a thorough understanding of the preferences of the target audience and their possible environment (Taleghani, 2011). Primary recipients must be carefully selected because they start the whole process of virus, with the exchanged messages to others. So they need to be such people as (e.g., access to major social networking), affect (influence on others) and representative of the target market. Foresight in the message is required. Any of them should to inform a valuable topic clearly and simply. Marketers need to assess the impact of the stimulus on the final results, especially when is related to the credit of marketer and the message is spam. That customers can easily send messages to others and participate in the campaign is another important issue. Private should be carefully communicated and people, who are informed, would not use email addresses or other personal information without permission. In addition, marketers need to ensure that viral campaign, combined with a joint marketing strategy; and also should strive hard for the social integration of online and offline section. The control mechanisms must be established and marketers must be able to follow and analyze campaign results (Chad Thevento, Katherine Watier, 2004).

In this study, the proposed model of Ghane and colleagues (2014) will be used that both external and internal factors on the use of viral marketing is examined. These factors have been introduced in the form of a conceptual model.

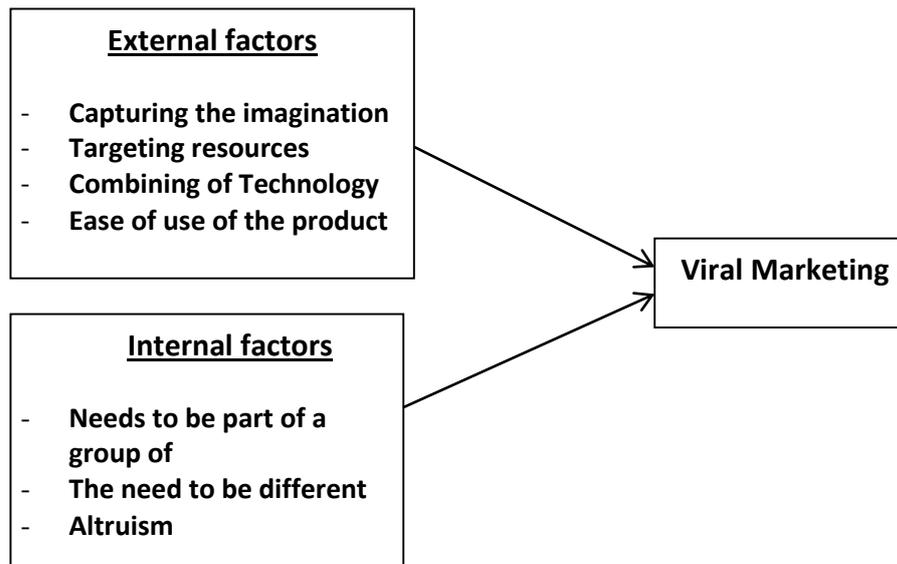


Figure1. The conceptual model (Ghane et al, 2014)

3. Previous Research

Madhoushi & et al (2014) in a study titled "Study of viral advertising characteristics and the reason of its publication on the Internet", showed that there is a significant difference between the mean of emotional content of viral ad, and non-viral ad and there is a positive correlation between emotional content and intend to transfer ad.

Moradi & Alipour Darvish (2012), in a study titled "The incentive for people to send electronic messages to others (viral marketing)." studied the Potential effects of 1. Needs to be part of a group 2. The need to be different 3. Altruism 4. The need for personal development, based on the number of messages sent to others. The results that was based on a sample of over 300 students of Islamic Azad University, has demonstrated those with more need to belong, more altruism , the need for further personal development and also with curious feature, more likely than others to send electronic messages.

Ghazizadeh & et al (2011) in a study titled "The desire to spread the message in Internet Viral Marketing", to investigate the factors that recipient tend to spread the message in viral marketing in the fast food industry; that in fact in this research opinions of Internet users in Tehran, Isfahan and Shiraz in relation to three key factors affecting recipients' intention to publish the message, namely the business sentiment, the charm and rich media assessed. The results showed that there was a significant positive correlation between variables of "the charm" and "rich media" and the variable "attitude the message". Also there is this significant positive correlation between variables "attitude on message" and "intention to spread the message of". On the other hand, there is a significant negative correlation between

the variable "commercial interests" with variables "attitude on message" and "intention to spread the message". The results showed a significant relationship between variable "difficult transition" and variables "rich media" and "desire to spread the message".

Ghane & et al (2014), in a study entitled "Factors affecting the electronic trade through viral marketing." investigated the internal and external factors affecting viral marketing. They collected data on 140 Iranian familiar with viral marketing through questionnaires and by analysing collected data found that external factors included: Capture the Imagination (portraying mentally), targeting resources, combining technology and ease of use of the product have a significant impact on viral marketing sample while the effect of any one internal factor include: the need to be part of a group, need to be different and altruism, is not significant.

Lekhanya (2014), in a study entitled "viral marketing effect on the company's brand reputation." began to analyze and evaluate the use of viral marketing and its impact on brand reputation of 75 company in the four provinces of South Africa. They with collected data through questionnaires and analysis them found that due to lack of knowledge and expertise in viral marketing, viral marketing strategies have not been used effectively by marketing executives of surveyed companies; because of lack of viral marketing skills, this company is not able to form viral marketing campaigns as the optimal approach and as well as part of its integrated marketing communications.

Roy et al (2014) in a study titled " Activities of word of mouth and viral marketing for online customers: according to the theory of the chain's loyalty" investigated the relationship between each of loyalty steps (cognitive, emotional and motivational) by word of mouth and viral marketing. They propose a model using the theory of loyalty and tested it through collected data using questionnaires from 509 customers of retailer sites. Research findings showed that effect of loyalty cognitive and motivational on word of mouth marketing, and the effect of emotional loyalty on viral marketing, was significant.

4. Research Hypothesis

- To depict the fantasies and imaginations effects on the viral marketing.
- Targeting resources effects on viral marketing.
- The combining of technology effects on viral marketing.
- Ease of use of the product effects on viral marketing.
- Need to be part of a group effects on viral marketing.
- The need to be different effects on viral marketing.
- Altruism effects on viral marketing.

5. Research Methodology

5-1- Research methodology and data collection methods

This study in term of purpose is practical and in terms of the method is a descriptive study. Literature method is used to collect data for the study and to gather the needed information to evaluate the effectiveness of internal and external factors on viral marketing (data analysis), the field method is used. In this study, a questionnaire was used as the primary means of gathering information.

5-2- population and sample

The study population included e-commerce users are in Rasht. The purpose of E-commerce users, people who are doing buy or part of its business and financial transactions through electronic means (such as a computer or cell phone, etc.).

To select the sample for using analysis method of inferential statistics, random sampling is used; this means there is no pre-selection heuristic. Since the study population are indeterminate (unlimited) and the scale of data are quantitative, the following formula is used to determine the sample size (Azar & Momeni, 2005):

$$n = \frac{\sigma_x^2 z^2 \frac{\alpha}{2}}{e^2}$$

n: The sample size
 σ : Standard deviation
 ϵ : Estimation accuracy

In this study ϵ is the estimation accuracy and is between 0.1 and 0.01. In this study, the value of ϵ is 0.08; the value of Z ($\alpha/2$) is selected from a normal distribution table ($\alpha=0.05$), which is equal to 1/96. The initial distribution of 30 questionnaires was used to calculate the standard deviation of 0.8. Given the above assumptions, the sample size is equal to:

$$\frac{(1.96)^2 \times (0.8)^2}{(0.08)^2} = 384$$

As can be seen in the formula, the sample size is 384 patients who were randomly selected from the population.

5-3- The method used for data analysis

In the present study the data obtained will be analyzed by using the methods of descriptive statistics and inferential statistical. Descriptive statistics will be used for the classification of raw scores, frequency distribution tables and calculation of dispersion parameters such as mean, standard deviation, variance and demographic characteristics analysis. Cronbach's alpha for reliability of testing and the Kolmogorov-Smirnov test was used for approval or disapproval of the normal distribution of data, to measure variables. In order to test the hypotheses of this study, multiple regression analysis was used. All statistical procedures were performed using SPSS software.

6- Statistical analysis and hypothesis testing

6-1- Descriptive analysis of research data

Descriptive statistical characteristics of the studied variables are presented in the table below.

Table1. Descriptive parameters (Central tendency and dispersion) of variables

variables	Number	Domain	Minimum	Maximum	Mean	Standard deviation	Variance
Conquer Information	384	2.7	2.2	4.9	3.95	0.52	0.27
Targeting resources	384	3	2	5	3.82	0.61	0.37
Combined Technology	384	2.6	2.4	5	3.93	0.53	0.28
Ease of use of the product	384	2.2	2.7	4.9	3.83	0.46	0.21
Needs to be part of a group	384	3	2	5	3.78	0.6	0.36
Require to be different	384	2	5	3.9	3.9	0.57	0.32
Altruism	384	1.7	3.3	5	3.84	0.18	0.03

As seen in the above table, among viral marketing component, the highest average is related to Conquer Information with mean of 3.95 and with standard deviation of 0.52 and the lowest average is related to Needs to be part of a group with mean of 3.78 and with standard deviation of 0.6.

6-2- Deductive analysis of research data

First, the linear relationship between two variables, external factors and viral marketing, or in other words the significance of the model is discussed.

Table2. Analysis of variance model for external factors and viral marketing

Model	The sum of squares	d.f	Mean square	F	Sig probability
Regression	41.18	1	28		
Error	38.19	383	0.41	0.98	0.000
Total	79.37	384			

Since the level of significance (Sig) is equal to zero and less than 0.05, then the assumption of a linear relationship between two variables is confirmed. After ensuring that the significance of the regression model, is time to estimate of regression coefficients; that the results are summarized in the following tables. The results show that capturing the imagination, targeting resources, combining technology, ease of use of the product, and are the significant part of a viral marketing from the perspective of the statistical community and will predict 55.55% of its changes.

Table3. The correlation coefficient of external factors

Standard error estimates	Adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
3.14	0.554	0.555	0.548

Since in the regression test, the significant level (Sig) of all variables are smaller than 0.05, the four independent variables affect the dependent variable. In other words, regression analysis show significant direct relationship between the four dimensions of tests and viral marketing in the 0.05. Hence, hypothesis testing results show that viral marketing will bring success if capturing the imagination, targeting resources, combining technology, ease of use of the product would used correctly. The positive sign of each variable indicates that how much the size would be larger, the level of viral marketing will be higher. So all levels of research, is fully confirmed.

Table 4. Multiple regression analysis

variables	Non-standard Coefficients β	standard Coefficients β	t	Sig
Fixed number	7.23		3.41	0.000
Capturing the imagination,	3.05	0.54	3.21	0.000
resources	3.22	0.51	2.42	0.001
combining technology	3.33	0/49	2.88	0.000
ease of use	3.46	0.45	2.48	0.000

As can be seen, Beta coefficients obtained for each variable was positive; so the first four hypotheses about the impact of external factors on viral marketing research are confirmed. Of the four variables, capturing the imagination by a factor of 0.55 have the greatest impact and ease of use of the product by a factor of 0.45 has the least effect on viral marketing.

The following, the linear relationship between two variables, the internal factors and viral marketing, or in other words, significance of the regression model is discussed.

Table 5. Analysis of variance model for internal factors and viral marketing

Model	The sum of squares	d.f	Mean square	F	Sig probability
Regression	44.16	1	29		
Error	39.14	383	0.44	0.95	0.000
Total	83.30	384			

Since the level of significance (Sig) is equal to zero and less than 0.05, then the assumption of a linear relationship between two variables is confirmed. After ensuring that the significance of the regression model, is time to estimate of regression coefficients; that the results are summarized in the following tables. The results show that needs to be part of a group, need to be different, altruism are the significant part of a viral marketing from the perspective of the statistical community and will predict 58.43% of its changes.

Table6. The correlation coefficient of internal factors

Standard error estimates	Adjusted coefficient of determination	The coefficient of determination	The correlation coefficient
3.17	0.552	0.58	0.584

Since in the regression test, the significant level (Sig) of all variables are smaller than 0.05, the three independent variables affect the dependent variable. In other words, regression analysis shows significant direct relationship between the three dimensions of tests and viral marketing in the 0.05. Hence, hypothesis testing results show that viral marketing will bring success if needs to be part of a group, need to be different, altruism would use correctly. The positive sign of each variable indicates that how much the size would be larger; the level of viral marketing will be higher. So all levels of research, is fully confirmed.

Table 7. Multiple regression analysis

variables	Non-standard Coefficients β	standard Coefficients β	t	Sig
Fixed number	7.11		3.32	0.000
to be part of a group	3.19	0.58	3.43	0.000
to be different	3.31	0.53	2.19	0.000
altruism	3.17	0/42	2.56	0.000

As can be seen, Beta coefficients obtained for each variable was positive; so each of three hypotheses about the impact of internal factors on viral marketing research are confirmed. Of the three variables, needs to be part of a group by a factor of 0.58 have the greatest impact and altruism by a factor of 0.42 has the least effect on viral marketing.

7. Limitations and Barriers

Because of the importance of research in Iran is not very clear, researchers often encountered with many obstacles and difficulties in work. The main problems that existed in this work include:

- The lack of primary sources and research record straight about the research topic.
- Lack of cooperation of some samples to complete the questionnaire.
- Lack of effective cooperation with researcher in several centers for data collection.

- Time limit in doing the research work.

8. Practical suggestions

- Availability of online games when buying online products can be a good incentive to introduce these products to others on behalf of users.
- To allow users access to the opinions of others whether positive or negative, can have a more rational decision for a better offer.
- Content designed so that it is possible to upload and insert comments, Also is a positive stimulus to promote the products and the right choice for the user.
- On the other hand, the solution for complements the above strategy is, messaging advertising, by using e-mail. This method, in addition to being low cost and fast, also covers a large target population. Another advantage of this approach is its fast transfer to other users.
- Product introductions, based on its functional characteristics is another important factor in product introduction by users to other users.
- Emphasis on ease of use of the product while shopping easy, including the factors affecting the introduction of the website to others.
- Promote the formation of groups and membership in reputable sites can allow transfer of information and interaction with other users.
- Interpersonal relationships between members of a large group of users, certainly brings extensive exchange of knowledge and at the same time offer products and other sites.
- On the other hand, the layout and placement of the products varying but yet impressive, raise the curiosity of potential users in searching for supplement information about the above products.
- A key part of the success of viral marketing is the development of an interactive space that encourages consumers to send the message. This is especially important in convincing the online customers who are concerned about sending a letter to their friend email.

9. Suggestions for Future Research

- Evaluation research model, in other areas, with the exception of e-commerce, because the results in this category, may be vary in other sectors.
- By other internal and external elements, and assess their impact on viral marketing.

- Examine the role of information technology in the development of viral marketing.

References:

- Alipour, M., & Jafari, F., & Shafaghi Darvish, A. (2011). "Viral marketing and its impact on the success of parties and candidates in the qualifiers", *Expert Journal of Political Science*, No.17, 111-137.
- Baghaei, J., & Moghadasi, A. (2007). "Providing a three-dimensional model of the challenges of implementing e-commerce in Iran", *Journal of Knowledge and Development (Scientific-Research)*, No.19, 83-113.
- De Bruyn, A. & Lilien, G.L. (2008). A Multi-Stage Model of Word-of-Mouth Influence through Viral Marketing. *International Journal of Research in Marketing*, 25(3):151-163.
- Dehghani, A. (2010). "E-commerce", *Bank*, 52-59.
- Du Plessis, P. J., Strydom, J. W., & Jooste, C. J. (2012). *Marketing management (6th Ed.)*. Cape Town: Juta.
- Ghazizadeh, M., & Sadari, A., & Shojaei, S.R., & Samizadeh, M. (2012). "The desire to spread the message of Internet Viral Marketing", *Modern Marketing Research*, First year, No.3, 219-236.
- Gohari, F.S., Mohammadi, S. (2014). A Comprehensive Framework for Identifying Viral Marketing's Influencers in Twitter. *International SAMANM Journal of Marketing and Management*, 2(1): 27-43.
- Golmohammadi, H. (2013). "Viral Marketing", *Journal of Tadbir*, No.23:251, 32-38.
- Jurvesto and Tim Draper, (2004). "Viral Marketing", 10.08.2004, at: <http://www.dfg.com/files/viralmarketing.html>.
- Kaplan, A. M. & Haenlein, M. (2011). Two hearts in three-quarter time: How to waltz the social media/viral marketing dance, *Journal of Business Horizons*, 54(1): 253-263.
- Lekhanya, L. M. (2014). The Impact of Viral Marketing on Corporate Brand Reputation. *International Business & Economics Research Journal*, 13 (2): 213-230.
- Moradi, M., & Alipour Darvish, Z. (2012). "Incentive for people to send electronic messages to others (Viral Marketing)", *Journal of Economics and Business*, No.1:3, 55-63.
- Roya, S.K., Butaney, G., Sekhon, H., & Butaney, B. (2014). Word-of-mouth and viral marketing activity of the on-line consumer: the role of loyalty chain stages theory. *Journal of Strategic Marketing*, 1-19.
- Taleghani, Mohammad, (2011). "The Relationship between customer satisfaction and relationship marketing benefits", *Arabian Journal of Business and Management Review*, 1(3), 78-86.
- Taleghani, Mohammad, (2011). "Key Factors in E-Banking: Concepts & Applications", *Life Science Journal*, 8(2).
- Taleghani, Mohammad, (2011). "Electronic Commerce Customer Relationship Management (A Case Study of Petrochemical Industry)", *Australian Journal of Basic and Applied Sciences*, 5(4), 181-186.