Discriminant model for online viral marketing influencing consumers behavioural intention

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ABSTRACT

Advancements in communication technology have given rise to the evolution of a new electronic form of word-of-mouth publicity i.e., viral marketing communication. Internet induced viral marketing is a highly effective tool available to marketers today. Online marketing has been used by various organizations via platforms, such as blogs, company websites, and social networking sites. Online marketing is helping organizations to grow their business by adopting strategies to reach out to their customers. Such marketing can be used to generate brand awareness among large populations in a short span of time; in addition, consumers can refer brands to others. Word of mouth publicity can be a powerful factor to influence the purchasing decision of customers. This paper is an attempt to predict the buying intention of consumers as a result of internet induced viral marketing techniques. The study was performed on primary data collected through self-structured questionnaire based on a five-point Likert Scale. Non-probability judgemental sampling was used. Discriminate analysis was performed using statistical software SPSS 16.0. The study determines the important factors that predict customer buying behaviour. Marketing managers should understand these factors and appropriately target the customer. Appropriate use of these factors can help the managers' businesses flourish. In this study, we found that the factors immense efficacy, professed security and escalating brand were significant predictors of the consumer's buying intention.

1. Introduction

According to Ridings et al. (2002) and Bruyn and Lilien (2008), in the small world concept, the demand for information, the good intention to share experience or ideas regarding products and services, the capability of the customer-to-customer (C2C) communications as electronic peer-to-peer referrals on the Internet and the potential for obtaining recommendations from mutual acquaintances have considerably increased the potential for Viral Marketing (VM), which is the effective mixture of the traditional idea called Word of Mouth (WOM). The advent of social networks, online communities, online videos and emails, blogs, and forums provide the ability to distribute information faster than ever before. Viral Marketing can spread any message to millions of people in a short time span in an effective manner. This technique has been used to take advantage of pre-existing social networks to produce exponential increases in brand awareness; this is similar to the spread of an epidemic.

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Viral Marketing is the current word that is used to describe the revolutionary manner by which any information proliferates across a million people rapidly within a short period of time. Marketers are now increasingly looking forward to tap this opportunity to deliver any type of a marketing message because of its ability to make the message contagious. Viral Marketing is not easy or uncomplicated; it has been observed in the past that all such marketing campaigns have not been always successful, with certain exceptions. The complexity of Viral Marketing campaigns arises from understanding how consumers react or respond to online marketing messages. It is extremely important to tap the appropriate type of consumer behaviour and attitude to leverage the opportunities available with the marketers. The effectiveness of viral marketing as a promotion relies on the types of social interactions and on identifying the most active media in viral marketing campaigns. Hence, in this study, we will examine certain factors that directly impact the implementation of Viral Marketing campaigns and how they play a role in creating positive sales for any product or service.

For the purposes of this study, we will consider viral marketing as a technique that utilises the Internet to transmit and spread messages among individuals who will filter and forward the messages to their peers, who may be interested in the message's content. Due to the extensive use of the internet in sharing information among young adults, marketers should focus on viral marketing as one of the new marketing sources. The growth in the number of internet users has been dramatic since it entered into existence. The marketing managers want to observe the factors that discriminate between those who have the intention of buying from those with the intention of not buying the products as a result of online viral marketing techniques, because once this can be identified, certain intervention measures can be put in place to ensure the businesses flourish. In our pilot study, we identified seven factors that affect the consumer attitude towards the internet induced by the viral marketing technique. In this study, these factors were considered as predictors to discriminate between the customer who wants to buy the product and the customer who does not buy the product as a result of an online viral marketing technique.

2. Literature review

According to Vilpponen et al. (2006), certain of the terms used to describe electronic WoM include "interactive marketing" (Blattberg and Deighton, 1991), "Internet word-of-mouth" and "word-of-mouse" (Goldenburg et al., 2001), "stealth marketing" (Kaikati and Kaikati, 2004) and "referral marketing" (De Bruyn and Lilien, 2004). Thomas (2004) attempted to unify these ideas in the term called "buzz marketing". Knight (1999) states that viral marketing is similar to a "digitalized sneeze", one characterized by the release of "millions of tiny particles that can infect others who come into contact with them". Welker (2002) emphasizes the contagious power of a virus and suggests that a "virus replicates with geometrically increasing power, doubling with each interaction". Viral marketing communication is viewed as a vital electronic extension of word-of-mouth (WoM) communication, which involves the principle of passing on or referring news, information or entertainment to another person. Where WoM has occurred, it simply implies that informal, ad hoc communication between individuals concerning products and services has occurred (Bayus, 1985). WoM communication is widely perceived as a dominant force in the marketplace where information is filtered out and passed on by friends or family who are viewed as free, unbiased sources of advice (Cruz and Fill, 2008; Carl, 2008). In viral marketing, the communication style used for transmission is usually informal. Messages are spread through different channels including e-mail, chat rooms and discussion forums. The messages may encompass various types of content that ranges from text and images, to Microsoft PowerPoint files, Adobe's Flash animations, and YouTube's video clips (Woerndl et al., 2008). Viral marketing is viewed as a far more effective, penetrating and faster medium compared with traditional WoM communication (Helm, 2000).

Spero and Stone (2004) state that it is estimated that in the UK, twelve- to sixteen-year-olds spend, on average, £3 Billion per year on products and services. More traditional advertising such as television ads no longer satisfies the youth sectors, who increasingly desire more information regarding products and brands before they decide to make a purchase. However, more importantly, it appears the "consumer generated media", as described by Frost (2007), is being used by over 50% of the population to make their purchasing decisions. It has been suggested that 82% of the fastest growing private companies use word-of-mouth techniques, which is why viral marketing is becoming more popular (Frost, 2007).

Jurvetson and Draper (1997) also argued that viral marketing utilises the recommendations by friends and has a snowball effect. Viral marketing is more powerful than other means of advertising because it conveys an implied endorsement from a known person. Therefore, companies should personalize their referral e-mail so that it clearly shows that it is originating from a friend. Currently, Viral Marketing Communication is still considered to be at a premature phase of development; therefore, information regarding its behaviour and magnitude has yet to be clearly established and determined. The Internet allows significantly more interaction, targeted communication, increased reach and better results evaluation, all at a low cost (Derbaix and Vanhamme, 2003; Kozinets et al., 2010). Although WOM occurs naturally between consumers, researchers note that there are marketing activities implemented to intentionally influence the per-to-peer communications (Kozinets et al., 2010). At the same time, as we will observe in the following, word-of-mouth is an important aspect in the modern communication media, such as e-mail, blogs and social media (Steyer et al., 2007; Smith et al., 2007). Consumer behaviour has been identified as a risk taking behaviour since Raymond Bauer proposed his risk theory in 1970 (Taylor, 1974). Since then, risk taking studies have examined consumer responses to reduce the risks of purchasing certain products and brands. Specifically, Sheth and Venkatesan (1968) observed that consumers rely on seeking information, such as a brand image or purchasing experience, to overcome a perceived risk. In another investigation, Roselius (1971) proposed word of mouth seeking as a searching method that consumers use to manage risk and uncertainty. Word of mouth (WOM) is a primary information channel that influences consumer decision-making (Arndt, 1967; Engel et al., 1969; Katz and Lazarfeld, 1955; Richins, 1983; Richins and Root-Shaffer, 1988). Accompanied by the prevalence of the online marketplace, eWOM is rapidly flourishing. McGuigan (2008) stated that 77% of online consumers check online reviews and the ratings of products before deciding to make a purchase, and 92% of consumers reported that online reviews are extremely helpful (Kee, 2008).

3. Research methodology

The research design of this study is exploratory in nature. The objective of exploratory research is to explore or search through a problem or situation to provide insight and understanding (Kothari, 2004). The analysis of collected data was performed using Statistical Package for Social Science (SPSS 16.0) and MS Excel 2007. In a pilot study on a sample of 110, seven factors were extracted using principal component factor analysis, which are Immense Efficacy (% of Var. = 19.693), Supportive Access (% of Var. = 13.17), Professed

Security (% of Var. = 10.289), Message Material (% of Var = 10.18), Irrepressible (% of Var. = 6.503), Consumer dependency (% of Var. = 6.029) and Escalating brand (% of Var. = 5.142). The total percentage of variance for factors was 71.004%, and the Eigen values for each dimension was more than one. The details of these factors are provided in Annexure 1.

Discriminant analysis was applied using these seven factors as dependent variables and buying intention as the independent variable; buying intention is a nominal variable with two levels of categories i.e., 1 = buy the product and 2 = not buy the product.

Discriminant or discriminant function analysis is a parametric technique to determine which weightings of quantitative variables or predictors best discriminate between 2 or more than 2 groups of cases and do so better than chance (Cramer, 2003). The analysis creates a discriminant function, which is a linear combination of the weightings and scores of these variables. The maximum number of functions is either the number of predictors or the number of groups minus one, whichever of these two values is smaller.

$$Z_{jk} = a + W_1 X_{1k} + W_2 X_{2k} + \ldots\ldots + W_n X_{nk}$$

Where:

Z_{jk} = Discriminant Z score of discriminant function j for object k.
a = Intercept.
W_i = Discriminant coefficient for the Independent variable i.
X_{ik} = Independent variable i for object k.

4. Hypothesis

The heightened focus on viral marketing in the computer and management literature is a sign that there can be significant benefits to be gained from viral marketing.

Informativeness is an important factor in determining the effectiveness of advertisements (Saadeghvaziri and Hosseini, 2011). Informativeness has an impact on consumers' attitude toward online advertising because it helps them in making purchase decisions (Tsang et al., 2004). The information provided to the consumers by means of mobile phones should consist of features such as accuracy, timeliness, and usefulness for generating positive consumers' attitude. Consumers are interested in receiving messages that are relevant to them (Haghirian et al., 2005). Entertainment is a significant predictor of the value of web-based advertisements and hence, determines their efficiency. Interesting and pleasing ads have a positive impact on consumers' attitude towards brands. Moreover, entertainment is the most important feature that affects consumers' attitude towards mobile advertising (Tsang et al., 2004; Bauer et al., 2005). Therefore, we hypothesized that

H1. Immense Efficacy is a good predictor of intention to buy as a result of viral marketing.

One important benefit is that viral marketing is relatively inexpensive in comparison to many other forms of advertising and marketing campaigns (Dobele et al., 2005; Kaikati and Kaikati, 2004; Welker, 2002). The other major benefits relate to the positive diffusion characteristics; viral marketing can, for example, reach audiences within a short period of time (Kaikati and Kaikati, 2004) as messages spread exponentially at a rapid speed (Helm, 2000; Welker, 2002). This rapid diffusion can significantly boost the speed of the adoption of the marketed product or service (Dobele et al., 2005). Hence, it is hypothesized that

H2. Supportive access is a good predictor of the intention to buy as a result of viral marketing.

Many of the users show a lack of trust in terms of the credibility of the medium, thereby considering the material as spam and are reluctant to provide their personal information to companies because they often think of advertisers as dishonest (Kelly et al., 2010). Higher source credibility results in a more favourable consumer response towards the SMS advertisements (Muzaffar and Kamran (2011)). The credibility and trustworthiness of the viral message source is also closely linked with the perceived risk. If the viral marketing message originates from a trusted source, the perceived risk associated with the message is low. The message recipients express no security and privacy concerns when they receive viral message from their social network (Palka et al., 2009). According to Chu and Kamal (2008), if the blogger's trustworthiness is high, the blog readers will be willing to trust the information provided on the blog and would read the arguments made and vice versa. Hence, it is proposed that

H3. Professed Security is a good predictor of the intention to buy as a result of viral marketing.

Reyck and Degraeve (2003) maintain that advertisements that contain interesting and customized information that matches customer preferences will result in their positive attitude toward mobile advertisements. Furthermore, message variety and appropriate message delivery timings with an appropriate message frequency could also result in a positive customers' attitude toward mobile marketing messages. It is necessary that viral marketing messages contents are concise and are able to capture consumers' attention. Moreover, if the message content becomes excessively manipulative, it also irritates message recipients and results in a negative consumer attitude (Palka et al., 2009; Haghirian et al., 2005). It has been found that message clarity was considered as a significant factor to the success of advertising, particularly in the context of digital advertising (Taylor et al., 2006); this influences the consumer's attitudes in the area of viral advertising. Therefore, the hypothesis formulated is:

H4. Message material is a good predictor of the intention to buy as a result of viral marketing.

Minimal control occurs over information because social media sites are represented as "anything goes" communication channels because anyone can post anything. Hence, people do not trust these posts or the people posting those messages (Kelly et al., 2010). However, in addition to these significant benefits, there are risks and challenges that marketers must confront when engaging in viral marketing campaigns. Probably the largest risk is the lack of control associated with viral marketing campaigns: organisations have no means of controlling the spread of the message and the content of the transmission (Dobele et al., 2005; Helm, 2000; Kaikati and Kaikati, 2004; Welker, 2002) that the receivers of a message may consider. Based on this argument, it is proposed that:

H5. Irrepressible is a suitable predictor of the intention to buy as a result of viral marketing.

It is generally agreed that viral marketing involves the spreading of a marketing message via 'word of mouse,' which ensures that the receivers have the interest to pass along the message to their acquaintances (Kaikati and Kaikati, 2004). The dependency on the consumer for message transmission is a further risk because consumers, for example, may want a return from the organisation for passing on a viral message (Helm, 2000). Thus, it is predicted that:

H6. Consumer enslavement is a good predictor of the intention to buy as a result of viral marketing.

Brand familiarity has been identified, by Alba and Hutchinson (1987), Hoch and Deighton (1989), and Kent and Allen (1994), as the consumers level of direct and indirect experience with products or brands. It is clear that consumers are likely to respond to ads if

they are sent from the company that they know or are familiar with. Another area of opportunity for social marketing is "brand building", which connects enthusiastic online brand advocates with the company's product development cycle (Ferguson, 2008, p. 181). In this area, research becomes marketing; product developers are now using social forums to spot reactions after they modify an offer, a price, or a feature in a product or service. Such brand managed communities can have real success. Thus, this statement leads to the seventh hypothesis:

H7.   Escalating brand is a good predictor of the intention to buy as a result of viral marketing.

5. Analysis

Before proceeding with the analysis, we split the sample into two portions. Of the sample, 65% was used for analysis, and the remaining 35% was used as a control sample. The splitting follows the analysis sample and the control sample testing, which typically needs another data set to be collected for prediction purposes. This data set is achieved by splitting the sample for which we develop a function using the analysis and then use that function to predict the control sample to gauge the predictive accuracy of the model developed (Ramayah, 2006; Ramayah et al., 2004). To split the sample, we compute a variable using the function, as follows:

RANDZ = UNIFORM (1) > 0.65. In our study, the analysis sample is composed of 134 cases, whereas the control sample has 67 cases.

6. Results and discussion

The data were analysed using the enter method of discriminant analysis in the statistical package SPSS Statistics 16.0 An approximate idea of variables that may be important can be obtained by inspecting the group means and standard deviations. If there are no significant group differences, it is not worthwhile to proceed any further with the analysis. In Table 1, the group statistics mean values clearly indicate that there is a large separation among all the predictors within each other. The means of the variables, immense efficacy, supportive access, professed security, message material

and consumer dependency in the groups are significantly different, and the means of the variables, irrepressible and escalating brand, have nearly the same values. Otherwise, the same relation has been established in the tests of equality of the Group Means Table, where in excluding irrepressible and escalating brand, all of the other five predictors have a statistically significant difference. The pooled within group matrix (refer to Table 2) also establishes the fact that the intercorrelations among all the variables are very low and statistically insignificant.

The maximum number of discriminant functions is equal to the number of groups in the dependent variable minus one, or the number of variables in the analysis, whichever is smaller. In our study, the maximum number of discriminant functions is one. The canonical correlation is the multiple correlations between the predictors and the discriminant function. With only one function, the correlation provides an index of the overall model fit, which is interpreted as being the proportion of variance explained (R^2). In this analysis, a canonical correlation of .684 (refer Table 3) suggests that the model explains 46.7% (square of canonical correlation) of the variation in the grouping variable A high canonical value describes a good overall fit of the analysis, which, in our findings, is relatively good (0.684).

Wilks' lambda indicates the significance of the discriminant function. Table 4 below indicates a highly significant function (p = 0.000, which is less than .05, and we accept the Null Hypothesis). The lower the Wilks' lambda, the better the model is.

Table 3
Eigenvalues and correlation.

Function	Eigenvalue	% of Variance	Cumulative %	Canonical correlation
1	.877[a]	100.0	100.0	.684

Table 4
Wilks' lambda.

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.533	80.922	7	.000

Table 1
Mean values, test of equality of group means.

Independent variable	Mean values customer intention		Wilks' Lambda	F	df1	df2	Sig.
	Buy	Not buy					
Immense efficacy	3.69	2.69	.698	57.231	1	132	.000
Supportive access	3.60	2.78	.789	35.329	1	132	.000
Proffessed security	3.77	2.86	.822	28.663	1	132	.000
Message material	3.94	3.03	.746	44.884	1	132	.000
Irrepressible	3.91	3.88	.999	.085	1	132	.772
Consumer dependency	3.74	3.08	.894	15.728	1	132	.000
Escalating brand	3.86	3.86	1.000	.000	1	132	.989

Table 2
Pooled within-groups matrices.

		Immense efficacy	Supportive ACCESS	Professed security	Message material	Irrepressible	Consumer dependency	Escalating brand
Correlation	Immense efficacy	1.000	.222	.375	.409	.211	.081	.117
	Supportive access	.222	1.000	.161	.445	.083	−.040	.203
	Professed security	.375	.161	1.000	.238	.015	.021	.168
	Message material	.409	.445	.238	1.000	.171	−.171	.253
	Irrepressible	.211	.083	.015	.171	1.000	.091	.155
	Consumer dependency	.081	−.040	.021	−.171	.091	1.000	.051
	Escalating brand	.117	.203	.168	.253	.155	.051	1.000

We examine the probability of the Box's M statistic to determine whether we meet the assumption of equal dispersion of the dispersion or covariance matrices (multivariate measure of variance). At the alpha level 0.01, we reject the null hypothesis for this analysis, which means the covariance matrices differ between groups formed by the dependent. Thus, we re-run the discriminant analysis requesting the use of separate covariance matrices in classification. Consequently, we found that p > 0.01; thus, we fail to reject the null hypothesis that the covariance matrices do not differ between groups formed by the dependent (refer Box M results below).

Test results			
Box's M			5.939
F	Approx.		5.895
	df1		1
	df2		5.198E4
	Sig.		.015

Furthermore, we compared the accuracy rate for the holdout sample, which is 83.6% in our study, by chance accuracy rates. From prior probabilities for groups, we observe that the two groups contained .522, and .478 proportion of the sample of 134 cases used to derive the discriminant model.

The proportional chance criteria to assess model fit is calculated by summing the squared proportion of the sample that each group represent, we obtain 0.522*0.522 + 0.478*0.478 = 0.501. Based on the requirement that model accuracy be 25% better than the chance criteria, the standard to use for comparing the model's accuracy is $1.25 \times 0.501 = 0.626$, which is 62.6%. Our model accuracy rate of 83.6% exceeds this standard.

The maximum chance criteria uses the proportion of cases in the largest group, 0.522 in this problem. Based on the requirement that model accuracy be 25% better than the chance criteria, the standard to use to compare the model's accuracy is $1.25 \times 52.2\% = 65.25\%$. Our model accuracy rate of 83.6% exceeds this standard.

As shown above in classification Table 5, the predictive accuracy of the model for the analysis sample was 9.9%, and the holdout sample was 83.6%. The values indicate that the hit ratio of 83.6% for

the holdout sample exceeded both the maximum and proportional chance values. The prediction accuracy is also judged by press Q statistics; the formula for press Q is

$$\text{Press Q} = \frac{(N - n * k)^2}{N*(k - 1)}$$

Where:

N = Total sample size.
n = Number of observations correctly classified, k = number of groups.

Substituting the values for this problem (total unselected 67 cases, 56 correct classifications, and 2 groups), we obtain press Q = [67 − (56 × 2)]^2/67 * (2 − 1) = 30.22. This value exceeds the critical chi-square value of 6.63 with degree of freedom one. Therefore, we conclude that the prediction accuracy is greater than that expected by chance. By all three criteria, we would interpret our model as having an accuracy above that expected by chance. Thus, this is a valuable or useful model that supports predictions of the dependent variable.

To remove the outliers from the data, Mahalanobis distance scores for each case in the table of casewise statistics were used. Cases with large values of the Mahalanobis Distance from their group mean can be identified as outliers. For large samples from a multivariate normal distribution, the square of the Mahalanobis distance from a case to its group mean is approximately distributed as a chi-square statistic with degrees of freedom equal to the number of variables in the analysis. The critical value of chi square with 7 degrees of freedom and an alpha of 0.01 is 18.48. We scan the table of casewise statistics to identify any cases that have a squared Mahalanobis distance greater than 18.48 for the group to which the case is most likely to belong, i.e., under the column labelled 'Buy'. In this particular analysis, we find no cases with a sufficiently large Mahalanobis distance to indicate that they are outliers.

An additional means of interpreting discriminant analysis results is to describe each group in terms of its profile using the group means of the predictor variables. These group means are called centroids; these are displayed in the Group Centroids table. In our

Table 5
Classification results.

			Intention	Predicted group membership		Total
				1	2	
Cases selected	Original	Count	Buy	60	10	70
			Not Buy	17	47	64
		%	Buy	85.7	14.3	100.0
			Not Buy	26.6	73.4	100.0
Cases not selected	Original	Count	Buy	33	4	37
			Not Buy	7	23	30
		%	Buy	89.2	10.8	100.0
			Not buy	23.3	76.7	100.0

Comparison of goodness of results		
Measure	Value	Hit ratio for the holdout sample
Maximum chance	0.522	83.6
Proportional chance	0.501	83.6
Comparison with Hair et al. (2010) 1.25 times higher than chance	1.25* 0.501 = .626, 1.25*0.522 = .6525	
Press Q table value	6.63	
Press Q calculated value	30.22**	

a. Of the selected original grouped cases, 79.9% are correctly classified.
b. Of the unselected original grouped cases, 83.6% are correctly classified.
**p < 0.01.

study, the intention to buy has a mean of 0.889, whereas the intention to not buy produces a mean of −0.972. Cases with scores close to Centroids are predicted as belonging to that group.

Functions at Group Centroids	
Intention	Function
	1
1	.889
2	−.972

Calculation of the cutting score:
For unequal groups, the formula for finding cutting scores is

$$Z_{cs} = \frac{N_A \, Z_B + N_B Z_A}{N_A + N_B}$$

Where:

Z_{cs} = Optimal cutting score between group A and B.
N_A = Number of observations in group A = 70
N_B = Number of observations in group B = 64
Z_A = Centroid for Group A = .889
Z_B = Centroid for Group B = −0.972

Thus, the cutting score in our study is Z_{cs} = 0.083.

A respondent scoring Z score of more than 0.083 will belong to group one, which means that the consumer intends to buy the product, whereas those who score less than 0.083 intend not to buy, as influenced by viral marketing over the internet.

The Standardized Canonical Discriminant Function Coefficients provide an index of the importance of each predictor such as the standardized regression coefficient. According to this index, the variable consumer dependency has the highest positive score of 0.0446. Thus, consumer dependency is the strongest predictor. However, the variables irrepressible and escalating brand have low negative scores and thus, are less successful predictors. Many researchers use the structure matrix correlations because they are considered more accurate than the Standardized Canonical Discriminant Function Coefficients. The structure matrix table shows the correlations of each variable with each discriminate function. These Pearson coefficients are structure coefficients or discriminant loadings; they serve as factor loadings in factor analysis. By identifying the largest loadings for each discriminate function, the researcher gains insight to develop the function. In our study, efficacy is ranked first with a highest loading of 0.703. In addition, escalating brand and irrepressible have very low loadings; therefore, these variables are not associated with the intention of the customer. The arguments above are supported by the results given in Table 6.

The unstandardized canonical discriminant function coefficients are used to create the discriminant function (equation). This equation operates similar to a regression equation. In this study, we have:

D = (0.52 × Immense Efficacy) + (0.55 × Message Material) + (0.461 × Consumer Dependency) + (.399 × Supportive Access) + (0.235 × Professed Security) + (−0.207 × Irrepressible + (−0.275 × Escalating Brand) + (−5.374).

The discriminant function coefficients b or standardized form beta both indicate the partial contribution of each variable to the discriminate function, controlling for all other variables in the equation. The coefficients can be used to assess each predictor's unique contribution to the discriminate function and therefore, provide information on the relative importance of each variable.

Suggested Research Frame Work
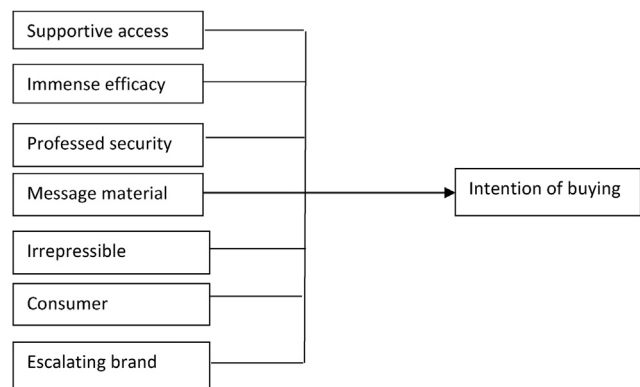
7. Hypothesis testing

On the basis of this study, we can observe that the F value for Immense efficacy was found to be 57.23 with p < 0.01(refer Table 6). Thus, we accept H_1, which indicates that Immense Efficacy is a good predictor of the intention to buy as a result of viral marketing. The study shows that if the online viral marketing message is entertaining, informative, cost effective, and time saving, and if it contains a wide range of products, it attracts customers to buy the product. The results of this research are consistent with the results of the previous research studies conducted by Tsang et al. (2004), Haghirian et al. (2005), Saadeghvaziri and Hosseini (2011) and Muzaffar and Kamran (2011). According to all these research studies, informativeness is an important predictor of the value of viral marketing and plays a significant role in determining consumers' attitude. Entertainment is a significant predictor of the value of web-based advertisements and hence, determines their efficiency. Interesting and pleasing ads have a positive impact on consumers' attitude towards brands. Moreover, entertainment is the most important

Table 6
Discriminant function coefficients.

Independent variable	Unstandardized canonical discriminant function coefficients	Standardized canonical discriminant function coefficients	Discriminant loading (rank) structure matrix	Univariate F ratio
Immense efficacy	.520	.397	.703(1)	57.231**
Supportive access	.399	.318	.552(3)	35.329**
Proffessed security	.235	.231	.498(4)	28.663**
Message material	.551	.433	.623(2)	44.884**
Irrepressible	−.207	−.162	.027(6)	.085
Consumer dependency	.461	.446	.369(5)	15.728**
Escalating brand	−.275	−.258	−.001(7)	.000
(Constant)	−5.374			

** p < 0.01.

feature that affects consumers' attitude towards mobile advertising (Tsang et al., 2004; Bauer et al., 2005).

Second, H_2 is also accepted, which indicates that supportive access is a good predictor of the intention to buy as a result of viral marketing. Easy navigation, rapid circulation, wide reachability, anytime anywhere access, and no geographical boundaries for circulation are the important characteristics of viral marketing message that impact the buying decision of the customer. This study is supported by previous research (Zamri and Idris, 2013), which investigates the consumer's purchasing intention of buying the product using six different independent variables of the perceived ease of use, perceived usefulness, information privacy and security, product and service quality, social influences and the role of experiential online shopping motives. However, the result solely supports the perceived ease of use as being significant to the consumer's intention to purchase.

Hypothesis H_3 is also accepted, which indicates that professed security is a good predictor of the intention to buy as a result of viral marketing. This finding supports the assumption that these sites are trustworthy and provides information from credible sources; in addition, people believe that these sources do not lead to unauthorized association. In our study, H_4 is also accepted, which indicates that message material is a good predictor of the intention to buy as a result of viral marketing. Sufficient information and clarity in the message attracts the customers. We reject H_5, which indicates that Irrepressible is a good predictor of the intention to buy as a result of viral marketing. This finding shows that people do not believe that online marketing circulates beyond limits, and they do not believe that the reviews and comments by the consumer can create disaster. Hypothesis H_6 is also accepted, which indicates that consumer dependency is a good predictor of the intention to buy as a result of viral marketing. The study supports the argument that viral marketing is dependent on the consumer because it is successful solely when someone forwards or shares the information with his or her peer group. In addition, people are willing to forward or share the information if they are provided with incentives. The information age has enhanced and accelerated the ability for everyday Internet users to communicate and spread the word regarding brands, products, experiences and events. Although digital media makes sharing information and content more accessible, the motivation to share is essential for the virality of a message to occur. Thus, viral success is dependent on a consumer's willingness to share a message to others within his or her social circle (Tang, 2006). Finally, H_7 is rejected, which indicates that escalating brand is a good predictor of the intention to buy as a result of viral marketing.

8. Conclusions

Immense efficacy, message material, supportive access, consumer dependency and professed security were found to be significant factors that influence the consumer's purchasing decisions. As internet and online businesses have become prevalent, online viral marketing is rapidly becoming an important and popular communication tool. Researchers have perceived the significance of online viral marketing and studied the impact on consumer purchasing decisions. Researchers examined the effectiveness of online viral marketing as a decisive factor for consumers' purchasing behaviour (Gretzel and Yoo, 2008; Pan et al., 2007). However, the diverse findings of the online viral marketing research have yet to be synthesized to improve the in-depth understanding of the online viral marketing mechanism and to integrate the influential factors that affect online viral marketing performance. Thus, this study intended to review and analyse the factors and hypothesized relationships in previous studies that relate to online viral marketing and develop the conceptual framework to represent the online viral marketing mechanism. Marketers can also find the market potentiality of their brand in a new market through this research in addition to determining problems in the existing market in terms of the predictors so that appropriate marketing policies can be implemented to tap the market. It has been established that the five abovementioned variables, which were included in the model, make it possible to discriminate between the two groups of customers. Effective execution of viral marketing campaigns can create an instantaneous buzz and help boost the promotion of brands, products and services.

9. Limitation

The sample used for this study is relatively small and was limited to a specific geographic region. The study was conducted by taking the views of the 201 respondents. A self-structured questionnaire was designed for the purpose. Respondents for the survey were taken from Indore city. This study could have been more reliable and would have yielded different results if the target demographic was broader. Similar to every study that involves human feedback, there is always large space for bias. Respondents could have provided false information due to the belief that it may reflect their personality. However, increasing the sample size and including respondents from varying demographics will remove this limitation.

Annexure 1. Factor analysis details

Factor	Items	Factor load	Initial Eigen values	% of variance
Immense efficacy	Detailed information regarding the product can be assessed anytime	.783	7.294	19.693
	It saves time	.746		
	It is cost effective	.717		
	Wide range of products can be displayed	.616		
	It is entertaining	.609		
	Relevant information is provided	.607		
Supportive access	Wide reach ability	.735		13.170
	Rapid diffusion of information	.694		
	No geographical boundaries for promotion	.683		
	Provides easy navigation on web	.653	2.554	
	Enlarged images of products can be assessed.	.582		
Professed security	VM can lead association to unauthorized companies	.703		10.289
	The site that provides the information is virus free	.619		
	Information is provided by credible sources	.611	2.358	
	VM is trustworthy	.610		
	The information that is downloaded is free of viruses	.500		

(*continued*)

Factor	Items	Factor load	Initial Eigen values	% of variance
Message material	Sufficient information is provided	.778		10.180
	The message is clearly understood	.743	1.509	
Irrepressible	The communication is uncontrolled	.741	1.204	6.503
	Frequent messages can lead to mail box traffic	.659		
Consumer dependency	People share the information when incentives are offered	.805		6.029
	VM is effective solely when consumers share it with others	.518	1.090	
Escalating brand	It is a useful marketing tool for creating brand awareness	.821	1.032	5.142

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