Interrelationships between Viral Marketing and Purchase Intention via Customer-Based Brand Equity

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Abstract The advent of the Internet has presented several challenges as well as opportunities for marketers. Marketers have found more innovative methods of communicating effectively with their target market, and viral marketing is one of these methods. This study tries to explore interrelationships between viral marketing and purchase intention via customer-based brand equity. The empirical results reveal that viral marketing is made up of interesting, useful and informative subjects; message interaction; message reception; and offensive content, in which each had differing effects on customer-based brand equity and purchase intention. Additionally, we also find that the interaction with viral marketing messages is extremely important in order to positively influence either brand equity or purchase intentions, because mere message reception have detrimental effects on brand equity and purchase intention. Furthermore, by including brand equity as a mediator, the negative effect of message reception on consumer purchase intentions can be transformed into a positive effect.

Keywords: *viral marketing, customer-based brand equity, purchase intention, advertising*

1. Introduction

Viral marketing is one of important areas in terms of marketing research. Viral marketing is that which is able to generate interest and the potential sale of a brand or product through messages that spread like a virus, in other words, quickly, and from person to person. The idea is for it to be the users themselves that choose to share the content. According to the studies of Cobb-Walgren, Ruble and Donthu [1], Christodoulides and Chernatony [2], Petrescu, Korgaonkar and Gironda [3] and Hayes, King and Ramirez [4], advertising is one way to increase brand equity. As such, the present research seeks to determine if a positive link between viral marketing and brand exists. Owing to the fact that marketing needs to be made more financially accountable, brand equity's influence on purchase intention will also be studied. Purchase intention is used in place of financial measures, as this study takes on the role of the consumer. It also needs to be recognized that advertising might influence purchase intention directly. Thus, the links between viral marketing and purchase intention will also be examined.

Internet usage in Taiwan and Asia is relatively high. In December 2017, roughly 82% of the Taiwanese population used the Internet and internet of thing. While there is no official number of e-mail users in Taiwan, studies in the United States have shown that approximately 96% of Internet users access e-mail, and in addition to this, e-mail is checked at least once a day [5]. In terms of absolute world Internet usage figures, Asia ranks the highest in the world, with approximately 460 million users. In fact, approximately one third of all internet users are from Asia. However, the statistics also show that the highest internet penetration levels occur in the more developed areas such as North America, Europe and Australia. These high penetration levels might indicate that internet marketing might be more effective in these parts of the world. However, there are also high levels of growth in terms of Internet usage in other, less developed, areas such as Africa and Latin America. Africa, for example, is experiencing a growth of approximately 900%. In other words, the Internet is becoming a more attractive means to reach customers.

The rise of the Internet has prompted new and innovative methods of marketing and advertising. Marketers have recognised the Internet's potential to offer them very low-cost forms of advertising. Viral marketing is one such example. It allows for firms 'distribute' their advertising messages to a set of audiences far broader and wider than just their database, but at a very low cost [6]. It is a relatively new topic in terms of marketing theory. Viral marketing has been defined in a variety of different ways by different scholars, however, this research will approach viral marketing with Helm's [7] definition – viral marketing is "a communication and distribution concept that relies on customers to transmit

digital products via electronic mail to other potential customers in their social sphere and animate these contacts to also transmit the products." Viral marketing is a prime example of online advertising, as it has the potential to stimulate purchase intention through both the informational and transformational route of advertising. Viral marketing is a particularly interesting area of study as, despite its ubiquitous usage, it is a new and relatively unexplored area of marketing. There are many examples of viral marketing. Some of the more successful campaigns are that of Hotmail, Burger King, Holiday Corporation, and the Blair Witch Project. From these examples, it is also clear that viral marketing can be used for a variety of different industries. For marketers, viral marketing is particularly useful, as customers transmit the messages, thereby making is an extremely attractive advertising format. Furthermore, as it is spread via consumers' networks, the message spreads quickly and exponentially. From a consumer's point of view, viral marketing provides entertainment, as well as information. Furthermore, because e-mails are received from familiar persons, the messages are potentially more relevant than e-mails from unfamiliar companies, particularly in the case where customer did not elect to receive such communications.

Marketing research has long studied the importance of brands. In the online context, brands have three important functions. These are to lower search costs, to build up trust, and to convey a sense of quality [6]. Brand equity, according to Christodoulides and De Chernatony [8], can be seen from different perspectives. These are the investor, manufacturer, retailer and consumer. As such, the importance of brands is evident as so many different parties are at stake. Brand equity can be defined from two perspectives, namely the firm's and customer's perspective. This study will take on the stance of the customers' perspective [9] and establish the effect of viral marketing on customer-based brand equity, as well as this resultant equity's influence on purchase intentions.

In marketing literature, purchase intention is often used, although it is not easy to ask about actual purchase behaviours in questionnaires. The concept of purchase intention stems from research on consumer decision-making. According to the studies of Fishbein and Ajzen [10], Bagozzi and Yi [11], Bagozzi [12] and Ajzen, Joyce, Sheikh and Cote [13], the single most accurate predictor of behaviour is behavioural intentions. It is used in such models such as the theory of reasoned action and the theory of planned behaviour. Essentially, marketers use advertising and promotions to stimulate purchase intentions. The results of this study will show this effect. In this study, the first objective of the research was to clarify and give a more comprehensive understanding of the viral marketing concept. The second goal was to reach a consensus on the previously disjointed brand equity literature. The third goal was to assess the impact of viral marketing on consumer purchase intention through customer-based brand equity. The final goal of the research was to use the empirical results to form useful recommendations for marketing practitioners wishing to utilize viral marketing as an advertising tool.

The remaining of the paper is organized as follows. Section 2 reviews the main literature. Section 3 develops the research framework and research hypothesis. Section 4 discusses the empirical results and analysis. Section 5 presents the concluding remarks.

2. Literature Review

In this section, in order to achieve our motivations and purpose of study, we try to investigate the interrelationships between viral marketing and purchase intention via customer-based brand equity. To effectively propose our research hypothesis and contract our theoretical framework, the related literatures are discussed here.

2.1. Viral Marketing

Viral marketing was defined by Helm [7] as "a communication and distribution concept that relies on customers to transmit digital products via electronic mail to other potential customers in their social sphere and animate these contacts to also transmit the product." From this definition, several characteristics of viral marketing can be found. Firstly, the viral message is a digital means of communication with customers. The content of such messages might include things such as text, pictures, videos, and links to websites. Secondly, viral messages are received from within one's social network. In other words, the company does not directly transmit the message to its client base. Instead, it relies on the client base to transmit the products. Viral marketing resembles word-of-mouth, where the information is spread via consumer networks. Additionally, viral marketing, like word-of-mouth, illustrates the concept of exponential growth (i.e. if a message is spread to three people initially, these three people might further spread the message to another three people that they know and so on) [7,14,15,16]. A third characteristic of viral marketing is that all messages contain some type of brand information. Note that this definition does not dictate that the origin of the message stems from a company. In fact, fans of the brand can also create viral messages.

The success and prevalent use of viral marketing lie partially in the relative low cost of this form of advertising. In addition to the low cost of advertising, viral marketing increases the speed at which new products and/or services are adopted [17]. A prime example of this is Burger King's subservient chicken campaign. The link www.subservientchicken.com was passed along via e-mail, utilizing customers' social links and networks. The campaign resulted in a 9% increase in demand per week for the Burger King Tender Crisp sandwich for the duration of the campaign [18]. Because viral messages are typically passed along within social networks, viral marketing is an extremely efficient means to reach a large group of people with similar tastes and interests. Furthermore, as messages are received from a known source, they have a higher rate of opening [19], as well as being perceived to contain more credible and reliable information [20,21,22].

One of the biggest problems with the use of viral marketing is a firm's loss of control of the message once it has been sent out. Firms are unable to control for changes

that might be made to their message, which might result in an inability to control brand image [7]. Another problem with the viral medium is that in some cases, people might be unwilling to pass messages along unless they have some incentive to do so [15,23]. Furthermore, a viral campaign might only be effective in spreading an advertisement, and not the brand. In other words, people might only remember the advertisement, and not the advertised brand, such that viral messages might serve merely as entertainment for viewers, offering little benefit in terms of usable information [19].

Viral marketing is only as effective as the number of eyeballs that receive it. Thus, it is imperative that marketers have a clear understanding of what causes people to pass e-mails along. Also, one needs to consider that the initial selection of recipients is extremely important to the viral campaign. Effective selection of the initial group of recipients is one of the keys to a successful campaign [20]. According to the research of Dobele, Lindgreen, Beverland, Vanhamme and van Wijk [20], the six commonly used appeals in viral marketing are joy, surprise, sadness, anger, fear and disgust. Advertisers needed to use an appeal to suit their advertised products. It was found that the content needed to elicit an emotional response in order to be passed along Sobhanifard and Balighi, [24].

2.2. Brand Equity

Brand equity can be viewed from two perspectives, that of the firm, and that of the customer. In this research, the customer-based view of brand equity was adopted. Keller [25] defined brand equity as "the marketing effects uniquely attributable to the brand." Brand equity is made up of several components. There is a vast number of diverging conceptualizations of brand equity.

Brand strength, as suggested by Srivastava and Shocker [26] is a component of brand equity made up of elements of brand awareness and brand associations. According to the research results of Keller, Parameswaran and Jacob [27], Buil, De Chernatony and Martinez [28] and, brand awareness refers a person's ability to recognize the brand, as well as to recall the brand even if unprompted. Furthermore, brand associations include measures of type, favorability, strength and uniqueness of brand associations. These associations can incorporate both product and non-product associations [10,29,30]. What is pertinent about brand associations is that they need to be strong and unique enough to stand out in the customers' mind [29]. The function of advertising, according to Keller, Parameswaran and Jacob [27] is to create associations in Aaker and Biel [29] viewers' minds. They described the associative memory network, which describes the process by which information is encoded into nodes and committed into memory. Advertising provides people with a means by which to link the nodes. The larger the network, the more likely something is to be recalled. Another function of advertising is to create the expectations of various elements of brand equity. For example, through advertising, one can create an expectation that a certain brand will outperform others. Furthermore, it has also been found that the level of advertising might also alter viewers' perceptions of the brand [28,31]. More specifically, higher levels of perceived advertising spending are linked to higher levels of confidence in a firm's products.

It is important to note here that customer-based brand equity is a perceived construct. A fair proportion of the literature on brand equity includes perceived quality as one of the components of brand equity. Perceived quality has often been cited as a part of brand equity [29,32]. Perceived quality refers to how one perceives a product or brand will perform, or, if one has had experience with the product or service, perceived quality then refers to the difference between expected and perceived received quality of that product or service [33]. Perceived quality is important, as brands with higher ratings of perceived quality have the ability to charge higher price premiums [29,34,35]. A third component of brand equity offered by the existing literature is perceived value. Perceived value refers to customers' perceptions of the tradeoff between what is spent and what is received. Additionally, this perception needs to be favorable in relation to other brands in the marketplace [36].

Another element of brand equity is brand loyalty. Brand loyalty refers to the level of attachment that a customer has towards a brand in terms of repeat-purchase behaviors, and willingness to pay higher price premiums [29]. However, more recent definitions of brand loyalty have included more emotional aspects of brand loyalty, as repeat purchases might merely be a signal of consumers responding to the incentives to purchase, as opposed to the actual willingness to purchase [3,37,38]. Additionally, Baalbaki and Guzmán [39] found evidence suggesting that there exists a causal order to brand equity, that is, increases in any other elements of brand equity will result in an increase in brand loyalty.

2.3. Purchase Intention

Purchase intention refers to consumers' intentions to purchase a product or service. It was cited by Fishbein and Azjen [10] as the single most accurate predictor of actual purchase behavior. This assertion was empirically tested and supported by Tellis [40] and Rahim [41] empirically tested and confirmed this in a study conducted on the consumer durable goods category. In the context of the current research, one could view viral marketing as a service offered by firms to potential customers. In this light, the available literature on satisfaction and loyalty are pertinent to the present research.

Satisfaction is essentially the difference between expected and actual levels of performance by a product or service [33,41,42]. Owing to the increased realization that retention is an easier way to increase profits than the acquisition of new customers, satisfaction has gained increasing importance in the marketing literature [43,44,45]. In order for people to be satisfied with the viral marketing medium, the information provided needs to be convincing and useful, and needs to provide people with a level of convenience that cannot be received from other competing sources of information.

Loyalty in terms of purchase intentions in this study refers to loyalty towards the viral marketing medium. Loyalty is shown through levels of trust. One of the behavioral manifestations of loyalty is recommendation. Thus, loyalty to viral marketing might result in people

discussing the benefits of using such a medium as an information source.

3. Research Framework and Hypotheses

The interactions between the factors will also be tested. Additionally, because a causal order has been previously found between the elements of brand equity, this causal order will also be considered in the study. These hypotheses, however, will be stated in after the factor analysis. The basic model is presented here in Figure 1.

The general model that was tested was that viral marketing would generally have a positive impact on brand equity, which would in turn, have a positive impact on purchase intentions. Additionally, viral marketing will generally have a positive impact on purchase intentions. Therefore, the following general hypotheses can be stated:

H_1: Viral marketing will generally have a positive impact on consumer brand equity.

H_2: Brand equity will have a positive impact on purchase intention.

H_3: Viral marketing will generally have a positive impact on purchase intention.

4. Methodology

4.1. Measures and Questionnaires

According to the research framework (Figure 1), the viral marketing and purchase intention and customer-based brand equity need to be measured to help test the hypothesis. A self-administrated questionnaire survey was conducted to collect empirical data. The questions in the questionnaire are designed based on a review of the literature in above section. The questionnaire was pre-tested and revised to ensure content validity. The questionnaire consists of three parts. The first part is viral marketing which is consisted by four dimensions such as e-mail format, received from one's social network, useful, interesting, and informative message content, and useful, interesting, and informative message subject line. The second part is Brand equity; brand awareness, quality, value and brand loyalty. The purchase intention part is measured by two dimensions, which are satisfaction with vial marketing and loyalty to vial marketing. All items in these three parts are measured by a 5-point Likert-type scale from 'strongly disagree' to 'strongly agree'.
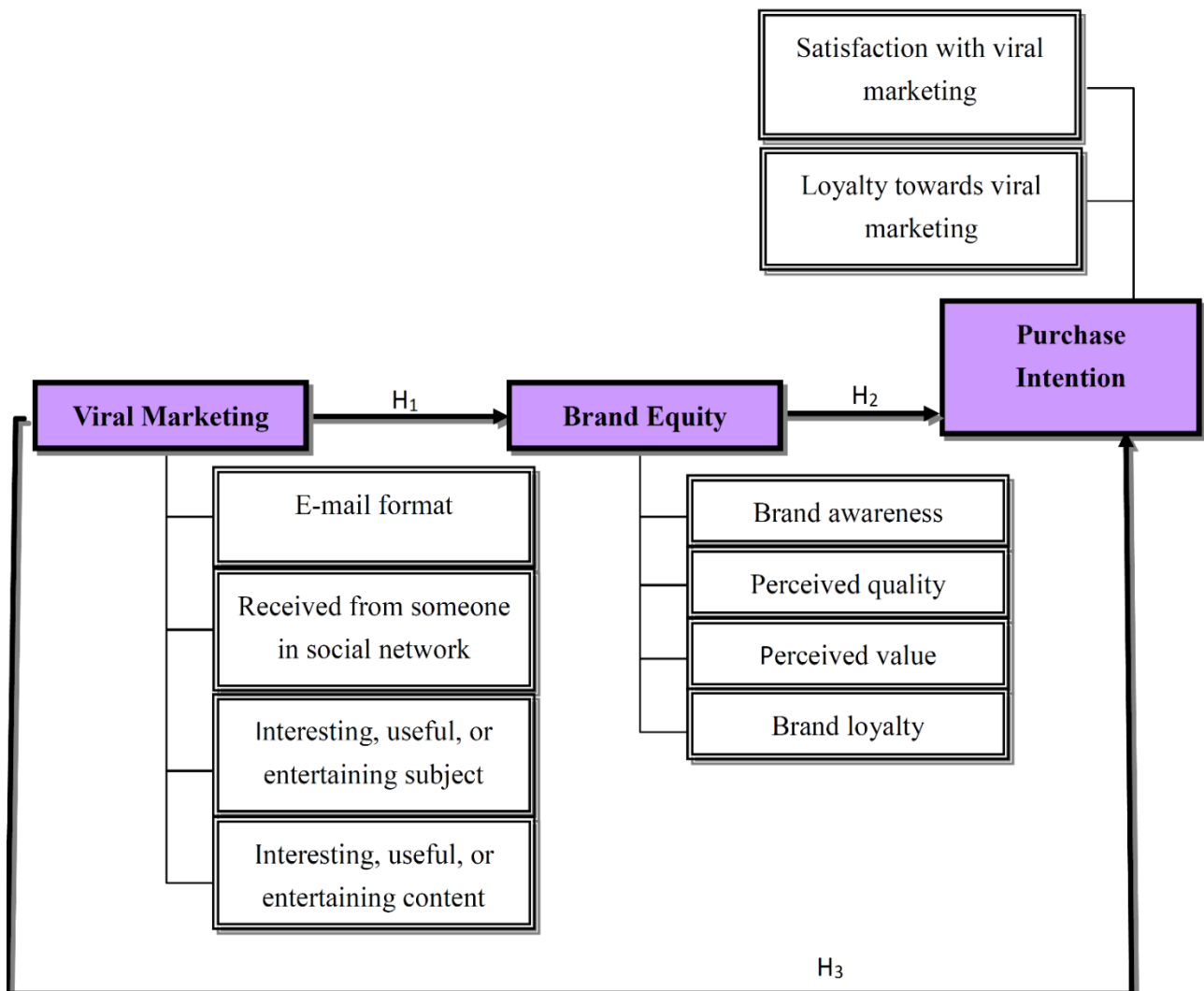

Figure 1. Influential Path and Research Hypotheses

4.2. Sampling and Survey

The questionnaires of this study were filled by the employees who work for Taiwanese-invested enterprises in Vietnam. In total, 511 responses were collected. 100 non-used responses have been deleted; hence the responses rate was approximately 80%. The questionnaire was directly distributed to the Taiwanese-invested enterprises in Vietnam which were randomly selected. The questionnaire was posted online on a Taiwanese website that offers market research services. The posted questionnaire contained both English and Chinese questions. The data was collected over one month in February 2018. The majority of respondents were fairly young (approximately 60%), female (approximately 60%) and had obtained a minimum of an undergraduate degree (60%). It was found that 70% of respondents used the Internet on a daily basis, and 58.6% of respondents checked e-mail daily.

4.3. Econometric Method

In order to achieve our research objective, this study uses econometric method to construct statistical analyses. An ANOVA will be conducted in order to ascertain differences within the respondent population. Reliability, validity and factor analysis were conducted by using SPSS to extract the main factors of viral marketing and purchase intention and customer-based brand equity. Then, adopt factor analysis to compute the principal component and varimax rotation to choose the main factors. The structural equation model (SEM) was analyzed using the LISREL computer package and path coefficients are estimated by maximum likelihood estimation (MLE).

5. Empirical Results and Analysis

5.1. ANOVA Results

An ANOVA was conducted in order to ascertain the differences between groups of respondents. Overall, it was found that responses differed with the age and Internet and email usage of students (Table 1).

Table 1. Results of the ANOVA Analysis

	Viral Marketing		Brand Equity		Purchase Intention	
	F-Value	P-Value	F-Value	P-Value	F-Value	P-Value
Age	2.405	.036[*]	1.929	.088	2.886	.014
Sex	.928	.336	6.033	.014[*]	.750	.387
Education	2.962	.053	5.194	.006[**]	1.973	.140
Internet Usage	3.504	.008[**]	6.179	.000[**]	8.743	.000[**]
E-mail Usage	2.029	.090[*]	2.153	.074	1.030	.392

5.2. Reliability

Reliability analyses were conducted using Cronbach's alpha. A reliable scale possesses an alpha score of at least 0.7. Alpha for all three scales met with this criterion. As indicated in Table 2, the results of the reliability analyses reveal that the three agreement scales are reliable with Cronbach's alpha scores of 0.918, 0.976, and 0.980 for viral marketing, brand equity, and purchase intention, respectively, implying that the scales are relatively reliable. The alpha scores for the importance scales are 0.939, 0.980, and 0.976, respectively.

5.3. Validity

The viral marketing scale was constructed out of items from the literature on viral marketing, such as Dobele, Toleman and Beverland [17] and Lindgreen, Dobele and Vanhamme [15]. As brand equity is a relatively well-researched area in the marketing literature [29,46,47]. The purchase intention scale was made up of items from scales reported by Mittal and Kamakura [44] and Murali, Pugazhendhi and Muralidharan [48]. As the scale was made up from previous scales, it is clear that the present research questionnaire possesses content validity.

Zaltman and Burger [49] and Fornell and Bookstein [50] proposed the use of communalities to measure convergent and discriminate validity. It was proposed that a commonality, or average variance extracted score of at least 0.4 indicates reasonable validity. Furthermore, eigenvalues in excess of 1 are also indicative of validity. The cumulative variance explained by the eigenvalues also needs to be larger than 40%. As this was the case in all of the scales, it can be inferred that the scale possesses reasonable validity. As also can be seen from Table 2, the questionnaire is both convergent and discriminate valid, as all AVE loadings are in excess of 0.5.

Table 2. Average Variance Extracted/Communalities*

	AVE		AVE
Viral Marketing			
ImpEnt	.803	ImpEmailU	.838
ImpOff	.818	ImpEmailAd	.644
ImpSub	.805	ImpRecSN	.817
ImpSubInt	.856	ImpForSN	.645
ImpSubInform	.899	ImpReadAD	.726
ImpSubUseful	.867	ImpFwd	.838
ImpSubOff	.835	ImpUseful	.812
Brand Equity			
ImpAware	.718	ImpPaymore	.714
ImpChars	.709	ImpGoodBuy	.774
ImpDiffIm	.395	ImpWorth	.743
ImpRecog	.709	ImpCompGB	.761
Imp1Name	.711	ImpReaComp	.748
ImpRecall	.747	ImpRpt	.741
ImpQual	.795	ImpLoyal	.799
ImpFunc	.801	ImpRec	.676
ImpConsisH	.688	ImpChoice	.830
ImpConsis	.726	ImpNext	.821
ImpBB	.789	ImpOnly	.764
ImpVal	.831	ImpNoBuy	.691
ImpChVM	.870	ImpConVM	.841
ImpTrVM	.874	ImpBuyVM	.863
ImpExVM	.846	ImpSatVM	.875
ImpRecVM	.882	ImpVMInfo	.819
Purchase Intension			
		ImpInt	.781

*Please refer to Appendix 1 for a list of abbreviations used in this table.

5.4. Factor Analysis

The KMO (Kaiser-Meyer-Olkin measure of sampling adequacy) and Bartlett's test of sphericity results (Table 3) indicated that a successful factor analysis could be performed. The factors extracted in the factor analysis were for those components in which eigenvalues were greater than 1. The factors were renamed from the items with factor loadings greater than 0.7.

Table 3. Kaiser-Meyer Olkin and Bartlett's Test of Sphericity Results

Dimension	Kaiser-Meyer Olkin	Bartlett's Test of Sphericity
Viral Marketing	.913	Chi-Square: 5376.484 Significance: 0.000
Brand Equity	.969	Chi-Square: 11931.818 Significance: 0.000
Purchase Intention	.931	Chi-Square: 4870.812 Significance: 0.000

5.4.1. Viral Marketing

It was originally thought that viral marketing would be made up of four factors, namely, e-mail format, received from one's social network, message content, and message subject line. Components with eigenvalues greater than 1 were found in both importance and satisfaction scales. Thus, there were four factors in the viral marketing construct. The factors were renamed "useful, interesting, and informative content," "message interaction," "message reception," and "offensive content." The factor "useful, interesting, and informative content" consists of those questionnaire items relating to the characteristics of the actual message. This definition of content also includes the subject line of the message. The second factor "message interaction" refers to the process of interacting with the message; in other words, the reading and passing along viral marketing messages. The third factor "message reception" refers to merely receiving the viral message in one's inbox. The final factor "offensive content" refers to a viral message and subject line that people might find offensive in some way.

5.4.2. Brand Equity

The brand equity satisfaction scale comprised of three factors, namely "brand value and loyalty," "brand awareness and quality," and "brand purchase." The brand equity importance was made up of two factors – "brand awareness, quality and value," and "brand loyalty." The first factor, "brand awareness, quality and value" is essentially three of the hypothesized antecedents combined. The second factor, brand loyalty, refers to both emotional and behavioral brand loyalty.

5.4.3. Purchase Intention

While it was originally thought that purchase intention would be made up of two factors – satisfaction and loyalty – the results of the factor analysis indicated that purchase intention was, in fact, a single factor in both satisfaction and importance scales.

5.5. Estimated Results of the Restated Hypotheses

The hypotheses are restated to include the various factors found in the factor analyses.

H1$_a$: Usefulness, interesting, and information content are all have positive impact on brand awareness, quality, and value.

H1$_b$: Interaction with viral content has a positive impact on brand awareness, quality, and value.

H1$_c$: The reception of viral content has a positive impact brand awareness, quality, and value.

H1$_d$: Offensive content has a negative effect on brand awareness, quality, and value.

H1$_e$: Useful, interesting, and informative content has a positive impact on brand loyalty.

H1$_f$: Interaction with viral content has a positive effect on brand loyalty.

H1$_g$: Reception of viral content has a positive effect on brand loyalty.

H1$_h$: Offensive content has a negative effect on brand loyalty.

H2$_a$: Brand awareness, quality, and value have positive impact on consumer purchase intentions.

H2$_b$: Brand loyalty has a positive impact on consumer purchase intentions.

H2$_c$: Brand awareness, quality, and value have positive impact on brand loyalty.

H3$_a$: Usefulness, interesting, and information content have positive effect on consumer purchase intentions.

H3$_b$: Interaction with viral content has a positive effect on consumer purchase intentions.

H3$_c$: Reception of viral content has a positive effect on consumer purchase intentions.

H3$_d$: Offensive content has a negative effect on consumer purchase intentions.

The following structural equations were set up in order to conduct the hypothesis testing.

$$\begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ \beta_{31} & \beta_{32} & 0 \end{bmatrix} \begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \end{bmatrix}$$

$$+ \begin{bmatrix} \gamma_{11} & \gamma_{12} & \gamma_{13} \\ \gamma_{21} & \gamma_{22} & \gamma_{23} \\ \gamma_{31} & \gamma_{32} & \gamma_{33} \\ \gamma_{41} & \gamma_{42} & \gamma_{43} \end{bmatrix} \begin{bmatrix} \xi_1 \\ \xi_2 \\ \xi_3 \\ \xi_4 \end{bmatrix} + \begin{bmatrix} \zeta_1 \\ \zeta_2 \\ \zeta_3 \end{bmatrix}$$

$$\eta_1 = \gamma_{11}\xi_1 + \gamma_{12}\xi_2 + \gamma_{13}\xi_3 + \gamma_{14}\xi_4 + \zeta_1$$
$$\eta_2 = \gamma_{21}\xi_1 + \gamma_{22}\xi_2 + \gamma_{23}\xi_3 + \gamma_{24}\xi_2 + \zeta_2$$
$$\eta_3 = \beta_{31}\eta_1 + \beta_{32}\eta_2 + \gamma_{31}\xi_1 + \gamma_{32}\xi_2 + \gamma_{33}\xi_3 + \gamma_{34}\xi_4 + \zeta_3.$$

5.5.1. Empirical Results of the LISREL Model

The restated hypotheses were tested using confirmatory factor analysis and the maximum likelihood method. The goodness-of-fit indices for the final model are shown in Table 4. This final model was obtained after a procedure of modifications made to the original model. Modifications were made for those cases in which MI (modification index) was greater than five. This was done via a step-wise process until no further modifications could be made without negatively affecting the goodness of fit of the model.

The results of the final model are reported in Figure 2. The solid lines represent significant effects at 1% or 5% significant level and while the dotted lines show insignificant results.

Table 4. A Comparisons of Goodness-of-Fit of the Final Structural Models

Type of Measure	Measure	Recommended Limits	Final Model	Acceptable
Absolute	χ^2/df	0-5	1.259 (0.014)	Yes
	GFI	>0.90	0.960	Yes
	RMR	<0.06	0.026	Yes
	RMSEA	<0.05	0.025	Yes
Relative	AGFI	>0.90	0.940	Yes
	NNFI	>0.90	1.000	Yes
	CFI	>0.90	1.000	Yes
Adjusted	PNFI	>0.50	0.670	Yes
	PGFI	>0.50	0.600	Yes

The testing results of all hypotheses are discussed as follows:

H1$_a$-1$_d$: The effect of viral marketing on brand awareness, quality and value

H1$_b$ for the positive interaction with viral content and brand awareness, quality and value and **H1$_d$** for the positive relationships between offensive content and brand awareness, quality and value are not supported by the statistical estimation results. However, the significant relationships are found between usefulness, interesting, and information content and message reception and brand awareness, quality, and value at the 5% level of significance. Therefore, **H1$_a$** and **H1$_c$** are supported. These findings show that, through mere exposure to the brand in terms of message reception, people appear to become more aware of the brand. Furthermore, in order to increase brand awareness, quality, and value, marketers need to use information that is interesting, useful, or informative in order to achieve the goal of a positive change in brand

equity. Our findings are supported by the research results of Lindgreen, Dobele and Vanhamme (2013) and Street [16].

H1$_e$-1$_h$: The effect of viral marketing on brand loyalty

Message interaction had positive significant effects on brand loyalty at the 5% level of significance. Message reception had a significant negative effect on brand loyalty, while offensive content had a significant impact on brand loyalty. Therefore, **H1$_e$** and **H1$_g$** are rejected in this study owing to the incorrect directionality of the results. One reason for the negative impact of message reception on brand loyalty is that perhaps these are unopened and unwanted messages. The result of the reception of such content might lead to such e-mails being considered spam by recipients. This finding supports those of Phelps, Lewis, Mobilo, Perry and Raman, [51] Huang, Su, Zhou and Liu [7] Lekhanya [14] and Wang and Street [16], who speculate that people don't necessarily open all chain e-mails. In fact, some people do not like seeing "[Fwd]" in the subject line of their e-mails. The lack of negative effect of offensive content on brand loyalty might arise from the fact that the respondents were fairly young. Previous studies have found that younger people tend to have a higher tolerance for offensive advertising materials. H1$_f$ for the positive relationship between viral content and brand loyalty and **H1$_h$** for the relationship between offensive content and brand loyalty have negative effects at the 5% level of significance. These findings indicate that the content of the viral e-mail have had a significant influence on their perception towards brands, so much that they choose to spread the word. Meanwhile, offensive content has a negative effect on brand loyalty.
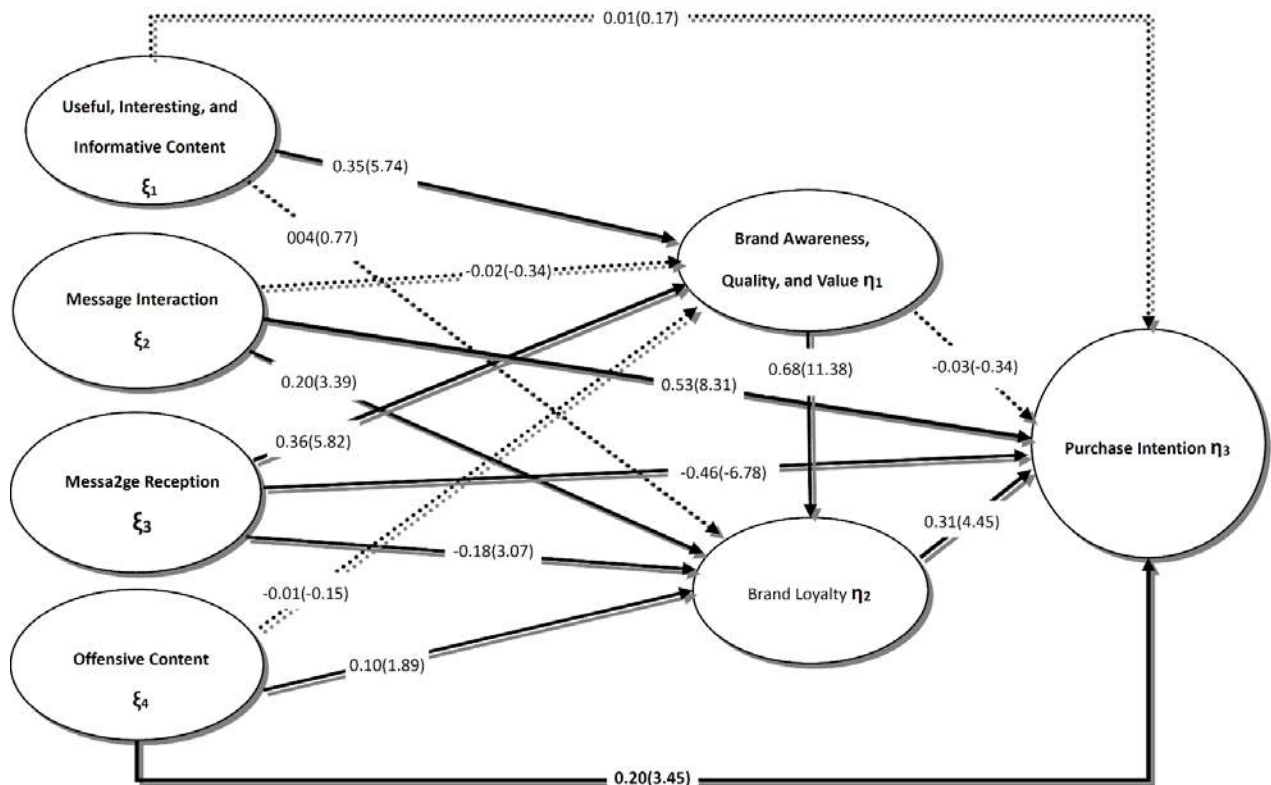

Figure 2. The Final Model Path Coefficients and t-Values

H2$_a$-2$_c$: The effect of brand equity on consumer purchase intention

Brand awareness, quality and value did not have a significant impact on purchase intentions. Therefore, **H2$_a$** was rejected. However, it was found to have a strong positive influence on brand loyalty. As such, **H2$_c$** was accepted. **H2$_b$** was accepted as brand loyalty was found to have a positive impact on consumer purchase intentions. These results reflect the causal order of brand equity found by Godey, Manthiou, Pederzoli, Rokka, Aiello, Donvito and Singh [32] as well as Kudeshia and Kumar [43] and are consistent with their results. The results imply that in order to directly increase sales, marketers should aim to increase brand loyalty.

H3$_a$-3$_d$: The effect of viral marketing on consumer purchase intentions

With the exception of usefulness, interesting, and information content, all elements of viral marketing have significant effects on consumer purchase intentions. However, contrary to what was expected, message reception had a negative impact on consumer purchase intentions, while offensive content had a positive impact on purchase intentions. Thus, **H3$_a$**, **H3$_c$** and **H3$_d$** were rejected. **H3b** was accepted because the result was both significant, and in the hypothesised direction. The effect of message reception on purchase intentions might be similar to the spam effect discussed in **H2$_c$**. The results indicate that the content of current viral marketing messages is not convincing, or memorable enough to result directly in consumer purchase intentions. The implication of this finding is that if marketers wish to see this link supported, viral marketing messages should have a stronger call to action. Another possible reason for the lack of purchase intention is that the majority of recipients might not be interested in purchasing the advertised brand. The brand and its products might not be useful to the recipient. A final implication of this is that usefulness, interesting, and information content influences consumer purchase intentions indirectly through brand equity. Additionally, the interaction with viral content, as opposed to the content itself, provides consumers with more motivation to purchase advertised brands. Offensive content was also found to have a significant impact on consumer purchase intentions. This might be in part due to the fact that such content might be more memorable than the types of viral content. In General, our findings are supported by the research results of Eckler and Bolls [21], Lekhanya [14] and Wang and Street [16].

Based on above discussions, the testing results of hypotheses are summarized in Table 5.

Table 5. Summary of Hypothesis Tests

Hypothesis	Description	Conclusion
H1$_a$:	Useful, interesting, and informative content has a positive impact on brand awareness, quality, and value	Accept
H1$_b$	Interaction with viral content has a positive impact on brand awareness, quality, and value	Reject
H1$_c$:	The reception of viral content has a positive impact on brand awareness, quality, and value	Accept
H1$_d$:	Offensive content has a negative effect on brand awareness, quality, and value	Reject
H1$_e$:	Useful, interesting, and informative content has a positive impact on brand loyalty	Reject
H1$_f$:	Interaction with viral content has a positive effect on brand loyalty	Accept
H1$_g$:	Reception of viral content has a positive effect on brand loyalty	Reject[*]
H1$_h$:	Offensive content has a negative effect on brand loyalty	Accept
H2$_a$:	Brand awareness, quality, and value has a positive impact on consumer purchase intentions	Reject
H2$_b$:	Brand loyalty has a positive impact on consumer purchase intentions	Accept
H2$_c$:	Brand awareness, quality, and value has a positive impact on brand loyalty	Accept
H3$_a$:	Useful, interesting, and informative content has a positive effect on consumer purchase intentions	Reject
H3$_b$:	Interaction with viral content has a positive effect on consumer purchase intentions	Accept
H3$_c$:	Reception of viral content has a positive effect on consumer purchase intentions	Reject[*]
H3$_d$:	Offensive content has a negative effect on consumer purchase intentions	Reject[*]

Note: *These hypotheses were supported in the opposite direction than was hypothesized, thus, in spite of their significance, the hypotheses were still rejected.

Table 6. Direct, Indirect and Total Effects

Hypothesis	Path	Direct	Indirect	Total	Bigger Effect
H1$_a$	VM1 (ξ_1) → BE1 (η_1)	0.35	-	0.350000	-
H1$_b$	VM2 (ξ_2) → BE1 (η_1)	0.00	-	0.000000	-
H1$_c$	VM3 (ξ_3) → BE1 (η_1)	0.36	-	0.360000	-
H1$_d$	VM4 (ξ_4) → BE1 (η_1)	0.00	-	0.000000	-
H1$_e$	VM1 (ξ_1) → BE2 (η_2)	0.00	-	0.000000	-
H1$_f$	VM2 (ξ_2) → BE2 (η_2)	0.20	-	0.200000	-
H1$_g$	VM3 (ξ_3) → BE2 (η_2)	-0.18	-	-0.180000	-
H1$_h$	VM4 (ξ_4) → BE2 (η_2)	0.10	-	0.100000	-
H2$_a$	BE1 (η_1) → PI (η_3)	0.00	0.210800[a]	0.210800	Indirect
H2$_b$	BE2 (η_2) → PI (η_3)	0.31	-	0.290000	-
H2$_c$	BE1 (η_1) → BE2 (η_2)	0.68	-	0.690000	-
H3$_a$	VM1 (ξ_1) → PI (η_3)	0.00	0.073780[b]	0.073780	Indirect
H3$_b$	VM2 (ξ_2) → PI (η_3)	0.53	0.062000[c]	0.592000	Direct
H3$_c$	VM3 (ξ_3) → PI (η_3)	-0.46	0.020088[d]	-0.439912	Direct
H3$_d$	VM4 (ξ_4) → PI (η_3)	0.20	0.031000[e]	0.231000	Direct

* Indirect effects:
[a] BE1 → BE2 → PI
[b] VM1 → BE1 → BE2 → PI + VM1 → BE2 → PI
[c] VM2 → BE1 → BE2 → PI + VM2 → BE2 → PI
[d] VM3 → BE1 → BE2 → PI + VM3 → BE2 → PI
[e] VM4 → BE1 → BE2 → PI + VM4 → BE2 → PI

5.5.2. Direct, Indirect and Total Effects

The aim of the path analysis was to establish the relative strength of the different routes to customer purchase intention. Table 6 details the direct, indirect, and total effects of the model. Interesting, useful, or entertaining content was found to have a larger indirect effect on consumer purchase intention than the direct effect. For the other three viral marketing constructs, the direct effect was found to be stronger. However, it was found that in order for message reception to have a positive effect on purchase intentions, brand equity needed to be included as a mediating variable.

One of the goals of advertising is to transform viewer attitudes and perceptions about products, services and brands. As such, interesting, useful, or entertaining content offers value to the recipient that might be useful in making more rational and informed decisions. For example, if a person received a viral advert about a brand, such information might be updated in his/her memory, and thus affect brand awareness, quality and value, brand loyalty, and as a final result, purchase intentions. This implies that interesting, useful, or entertaining content exists to transform viewer attitudes, as well as to educate them about the brand, perhaps also to involve the person more with the brand. Advertising naturally contains mental cues, which affect the perception of quality and value of a brand. Thus, one possibility for the stronger effect of this path is the mental activity and involvement that is associated with the interesting, useful, or entertaining content.

Interaction with viral media has a relatively strong effect on consumer purchase intentions, then an indirect effect. This result implies that marketers should aim to encourage interaction with the viral content, because this interaction causes the intention to purchase. Additionally, the strength of this direct effect illustrates the potentially powerful nature of viral marketing as an advertising medium.

The direct effect of message reception on consumer purchase intention was negative (-0.46). However, using brand equity as a mediator, this effect can be reversed (total effect = -0.439912). This reversal effect emphasises the importance of brand equity as a mediator for consumer purchase intention. The direct effect of offensive content on purchase intention was found to be stronger than the indirect effect. As mentioned previously, it is possible that one of the outcomes of creating shock is a more memorable brand.

While it may appear that the usefulness of viral marketing lies in its ability to directly influence consumer purchase intentions, the moderating role of brand equity cannot be ignored. Firstly, it is through brand equity that consumer purchase intentions can be strengthened. Secondly, for those negative effects caused directly by mere viral message reception, brand equity operates as a positive influence. In other words, as mentioned earlier, brand equity has the power to reverse the negative influence of message reception. Thirdly, the goal of the campaign also needs to be taken under consideration. In other words, there are times when the goal of a campaign is to create awareness about a brand, as opposed to directly selling the brand's products or services.

6. Concluding Remarks

The research results of the study show that, in general, viral marketing does have positive effects on brand equity and consumer purchase intentions. Additionally, brand equity also has a positive impact on purchase intentions. Viral marketing was found to influence brand equity through different mechanisms and in different ways. In terms of message content, it was found that usefulness, interesting, and information content would significantly and positively impact brand awareness, quality and value, while offensive content showed significant positive effects on consumer purchase intentions.

Additionally, offensive viral content is able to influence brand loyalty positively. Interaction with viral marketing messages showed significant positive effects on brand loyalty and purchase intention. Thus, if a person interacts with viral media, their brand loyalty is likely to increase, and they are also more likely to purchase the advertised brand, product, or service. The reception of viral content was found to have positive effects on brand awareness, quality and value. However, only receiving the message generally tended to have negative effects on brand loyalty, and consumer purchase intentions. This effect might suggest that perhaps consumers who do not interact with viral media perceive such messages as spam. Another interesting finding was the positive impact of offensive content on consumer purchase intentions. This might reflect the memorability of the content, or ages of respondents. The strength of the direct effect of viral marketing efforts on consumer purchase intentions, and thus the potential purchase behavior shows the effectiveness of viral marketing as an advertising medium. It was found that the indirect effect of viral marketing on purchase intentions through brand equity was relatively weak, in comparison with the direct effect. However, it was found that the content of viral e-mails has the ability to significantly influence the way brands are perceived, in terms of such things as brand awareness, quality, and value, as well as brand loyalty. In addition to this, one indirect in particular – the indirect effect of viral message reception on consumer purchase intention was a strongly negative and significant relationship. However, through the use of brand equity as a mediator, the effect of this negative relationship was reduced. In fact, the indirect route showed a positive relationship.

In terms of the two elements of brand equity, only the brand loyalty-brand equity link was supported in this study. In other words, those who are more loyal to a brand are more likely to purchase a product. The study does, however, find a relatively strong significant positive link between the two brand equity constructs. Therefore, in spite of the fact that brand awareness, quality and value were unable to directly and significantly influence consumer purchase intention; it does influence brand loyalty, and perhaps in this way, indirectly influence purchase intentions. The causal flow of brand equity found in the empirical analysis is similar to the results of related researches before. This logic is supported by the importance-satisfaction analysis, which showed that marketers should spend time emphasising the value of their brands, as well as the superior quality of their brands.

Therefore, in spite of the significant direct link between brand awareness, quality and value, and consumer purchase intention, brand awareness, quality and value should not be ignored. Instead, branding activities need to continue to take place in order to influence and encourage brand loyalty amongst current and potential customers. Brand equity acts as an important mediator for viral marketing and consumer purchase intentions. Firstly, it strengthens the advertising-purchase intention relationship in two of the factors of viral marketing. Secondly, it acts a means to lessen the negative effects of viral message reception on consumer purchase intentions. Thirdly, in terms of message reception, it is found that message reception, in spite of its potential link to junk mail and spam, might have a positive relationship with consumer purchase intentions, if brand equity is used as a mediator for the two concepts.

In terms of brand equity, brand loyalty was found to be the key determining consumer purchase intentions. However, this indirect link from viral marketing through brand equity to consumer purchase intentions was found to be relatively small in comparison with the direct link from viral marketing to purchase intentions. Furthermore, three of the four viral marketing factors displayed significant effects on consumer purchase intention. Interaction with viral media (i.e. opening it, viewing it, and forwarding to one's social network) had a significant positive direct effect on purchase intention. Conversely, merely receiving the viral e-mail diminishes purchase intentions. It was also found that offensive content had the power to increase purchase intentions.

Prior to the launch of any advertising campaign, marketers need to carefully consider the objectives and target markets. The findings of this study indicate that, in order for the campaign be to alter customer-based brand equity, the content of viral messages needs to be interesting, useful, or informative. This type of content was found to have a relatively strong impact on brand awareness, quality, and value. If the goal of the campaign is to promote and induce people to purchase new products, a campaign featuring offensive content might be particularly effective. One needs to be particularly careful in utilizing content that could potentially be offensive, as previous studies have also found that a younger audience tends to be more receptive to such content.

To sum up, the results of the present research show the effectiveness of viral marketing as an advertising medium. Generally, it was found that the content of viral marketing messages has the potential to positively influence the elements of brand equity and purchase intentions. The results also show that marketers need to spend time to create effective means to encourage recipients to open up viral messages. This can be accomplished, for example, through the effective use of a subject line.

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Appendix 1: List of Abbreviations used in the Empirical Analyses

Abbreviation	Explanation
IM-	Importance
EmailU	I often use email
EmailAd	I have received e-mails advertising a brand, product or service
RecSN	I have received e-mails from someone in my social network (e.g., friends, family, colleagues, schoolmates)
ForSN	I forwarded the e-mail to someone in my social network
ReadAD	I read the advertisement in the e-mail
Fwd	I forwarded the e-mail to my friends and family
Useful	I found the information in the e-mail useful
Int	I found the e-mail's contents interesting
Ent	I found the e-mail's contents entertaining
Off	I found the e-mail's contents offensive
Sub	The e-mail had a subject line
SubInt	The e-mail's subject line was interesting
SubInform	The e-mail's subject line was informative
SubUseful	The e-mail's subject line was useful
SubOff	The e-mail's subject line was offensive
Aware	I am aware of [brand]
Chars	Some characteristics of [brand] come to my mind quickly
DiffIm	I have difficulty imagining [brand] in my mind
Recog	I can recognize [brand] amongst other competing brands
1Name	When I think of the product category, [brand] is the first name that comes to mind
Recall	I can quickly recall [brand] when asked
Qual	The likely quality of [brand] is extremely high

Func	The likelihood that [brand] will be functional is very high
ConsisH	I can always count on [brand] for consistently high quality
Consis	The quality of [brand] is consistent
BB	[Brand] is the best in its product class
Val	[Brand] offers good value for money
PayMore	I am willing to pay more for [brand] compared with other brands of similar products
GoodBuy	All things considered (price, time, and effort), [brand] is a good buy
Worth	What I get from [brand] is worth the cost
CompGB	Compared with other brands of the product category, [brand] is a good buy
ReaComp	There are reasons to buy [brand] over competitors' offerings
Rpt	I have purchased [brand] on a previous occasion
Loyal	I consider myself to be loyal to [brand]
Rec	I would recommend [brand] to other people
Choice	[brand] would be my first choice
Next	I plan on purchasing [brand] for my next choice of the product category
Only	I would only use [brand]
NoBuy	I will not buy other brands if [brand] is not available at the store
ChVM	I would choose viral marketing over other sources of information
TrVM	I trust viral marketing
ExVM	I would use viral marketing as my primary source of information, even if the product is an expensive one
RecVM	I would recommend that other people use viral marketing as their primary source of information
ConVM	Viral marketing is a convenient way to obtain information about products, services, and brands
BuyVM	I decided to purchase the product after seeing the viral advertisement
SatVM	I am satisfied with the content received in the viral advertisement
VMInfo	Viral marketing is a good way to obtain information about brands, products, and services
VM1	Useful, interesting, and informative content
VM2	Viral interaction
VM3	Viral reception
VM4	Offensive content
BE1	Awareness, quality, and value
BE2	Loyalty
PI	Purchase intention