Indian Journal of Science and Technology, *Vol 9(43), DOI: 10.17485/ijst/2016/v9i43/105034, November 2016*
ISSN (Print) : 0974-6846
ISSN (Online) : 0974-5645

A Study on Understanding Social Media users by Segmentation Analysis Focus on South Korea

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Abstract

Objectives: The goal of this research is to search the SNS (Social Networking Service) users after that we classify SNS users by effectiveness of social media marketing and SNS usage. **Methods/Statistical Analysis**: A total of 235 valid questionnaires were employed for this study. The cluster analysis was used to categorize respondents based on their response toward social media marketing. To identify characteristics of segments, the average of each of components was used. In the next step, a discriminant analysis was employed to investigate whether the groups are properly placed. Finally, The ANOVA was used to differentiate the three clusters. **Findings**: This study found that SNS users were divided into 3 groups: The cluster 1 was named as <Question Mark: High Usage and Low Impact group>; the cluster 2 was named as <Soon to be SNS lovers: Low Usage and High Impact group>; the cluster 3 as <Social Media Lovers: High Usage and High Impact group>. **Improvements/Applications**: This study provides useful implication for marketers and a lot of companies to carry out effective Social Networking Service marketing program.

Keywords: Popularity, Positive Evaluation, SNS Reliability, Social Media, Social Networking Services (SNS), Usage SNS

1. Introduction

Social Networking Services (SNS) enable service providers (company) to present their products/services and maintain social connections with customers[1]. Consumers have adapted to social networking sites quickly, which leads SNS to be the most significant advances of consumer based information technology. The social media marketing is powerful in promoting brands as people enjoy sharing information with others. Social media users are exposed to brand-related messages and are able to interact with a company directly.

Despites its significance of, however, 55% of Face book users who support a company's Facebook answered that they do not want to see a company's posts or visited a company's page again. Unfortunately, it seems to be very hard for a company to keep customers engaged long[2]. It is widely expected that SNS will continue to proliferate; maintenance is very difficult for companies. Besides, it is difficult to know effect of SNS. So, it is time to fully understand about SNS users. This study aims to explore the SNS users. Especially, we will classify SNS users by effectiveness of social media marketing and SNS usage. To improve our understandings of social media users, this study investigates: 1. Attitude and behavioral intention towards social media marketing and 2. To what extent social media marketing affects each segment. Segmentation analysis is employed for this study. By doing so, the effectiveness of social media marketing will be identified. Based on various responses towards social media marketing, future strategy for each segment is discussed. The results of this study are expected to provide practical implication to SNS marketers and a lot of companies.

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2. Literature Review

Social media marketing is defined as 'a procedure that empowers persons to advertise their websites, services using online channels'[3]. Facebook, Twitter, YouTube and others are the key examples that have been widely available. Social media marketing can be characterized by social links and networking promoted by a company in order to communicate with its prospects and consumers[1]. In[4], social media provides a new opportunity for marketers, as SNS users are playing active roles both as marketers and customers. In[5] even proposed that a new system for advertising is needed in the online context considering that advertising should not be focused on a message itself any more. Marketers should use social media marketing as a way of providing customers with opportunities to link to other people. Social media marketing is all about connection between brands and consumers driven by customer.

Understanding social media users are getting critical for marketers to be successful. In[6] argued that social media marketing is definitely transforming traditional marketing into prepared to connect consumers and brands. The role of media in marketing communication is changing, thus, marketers has to communicate messages more interactively based on deeper understanding of customers. In[7] also supported that customer-generated messages are getting popular as customer desire to share contents to get involved with more people. According[5], advertising in the online context, advertising has to provide consumers with channels that can link to other people not just message itself. Therefore, social media marketing is all about two-side connection between brand and consumers. Moreover[8] emphasized that social media marketing is much more powerful when marketers are successfully combine social interaction, emotional involvement and hedonic experiences.

The significance of the role of social media marketing has been strongly supported in previous studies. According to[9], the effectiveness of word-of-mouth in the social media context becomes greater, as it costs relatively low but has rapid response rate. The term 'electronic word-of-mouth' was used in the study of[10]. In their study, social media marketing is a modern marketing skill that promotes consumers to express their own opinions without restraint. Moreover[11] found that social media marketing should be recognized as a competent and reliable form of marketing as it is one of the powerful tools for consumers to link to purchase intention.

3. Methodology

The survey was carried out in South Korea. The members of online panel recruited by a research company were used a sample frame. Participants were requested to view a particular Facebook page of a healthcare provider. Participants were able to read information regarding upcoming events and health information. In the survey, participants were informed that researchers have interests in social media users' reaction toward social media of a community service. After viewing a Facebook page of a hospital, participants were invited to answer related questions. Participants were asked to evaluate each items based on information given Facebook page. The questionnaire included items related to trust towards social media, attitudes towards messages and behavioral intention[12–14]. A total of 7 items were employed to evaluate the level of trust, 11 items were employed to measure the level of attitudes (reliability and reputation) towards social media messages[4]. The level of social media usage was measured using 3 items. Behavioral intention was measured by 6 items. A 7-point Likert scales were employed to assess the variables, ranging from: 1. Strongly disagree to 7. Strongly agree. Demographic items were added.

A total of 235 valid questionnaires were used for data analysis. Among respondents, gender (men (47%) and female (53%)) was well balanced. 33% of participants were between 30 and 40, while 34% were between 40 and 50 in their age. Data was analyzed through three stages[15]. First, EFA analysis was carried out to identify the underlying dimensions of social media behavior. Principal Component Analysis (PCA) was employed with Varimax rotation. EFA is a useful as a preliminary analysis as it reduces a number of items to a more manageable set[16]. The factor score was saved to use for clustering analysis. In the second stage, hierarchy cluster analysis was carried out to identify the clusters employing K-means cluster analysis. Discriminant analysis was chosen to find better choice in deciding segment classification. In the last stage, multinomial log it analysis was used to identify the characteristics of each segment.

4. Results of the Study

An exploratory PCA was conducted to refine the scale items. Bartlett's test of sphericity and the Kaiser-Meyer Oklin (KMO) measure of sampling adequacy showed that those items were suitable for conducting a factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of

sampling adequacy was .929. Bartlett's test of sphericity was significant (p<.05). Table 1 show that the results of the principal component analysis factored four parts with an explanation of 75.245% of the total variance. No item was excluded. The four parts were named as: 밪rust?(7 items: component1), 밨eliable source?(6 items: component 2),; 'Reputation?4 items: component 3) and 밣sage? (3 items: component 4).

A cluster analysis was used to categorize respondents based on their response toward social media marketing. To identify characteristics of segments, the average of each of components was used. Previous studies suggest that a hierarchical cluster analysis using Euclidean distance is useful method[2,17]. The Table 2 shows comparison of average of each component in three segments as well as four segments.

In the next step, a discriminant analysis was employed to investigate whether the groups are properly placed. After two options were compared, the choice of three clusters were found to provide better explanation, as 98.6% of original grouped cases were rightly classified (Table 3). This cross-validation classification suggested that three clusters are more appropriate.

The ANOVA was used to differentiate the three clusters. Table 4 shows that respondents' future intention was significantly different among three clusters. The cluster 3 shows the highest level in terms of impact of social media marketing, while cluster 1 was the lowest. The average of

Table 1. Factor analysis based on responses of social media messages

Factor		Factor loading	Eigen value	Variance explained
Trust	Medical team would have a great deal of medical experience	.858	9.102	45.508
	Medical team would use appropriate medical procedure.	.839		
	Medical team would have excellence in medical treatment.	.875		
	The hospital would be equipped with nice medical devices and facilities.	.849		
	Overall, the medical technology of the hospital seem to be good.	.843		
	I would trust the medical suggestions by medical team of this hospital.	.791		
	The medical service of this hospital would be trustworthy.	.816		
Reliable source	I prefer to choose popular places many people recommend.	.711	2.782	13.912
	I prefer to choose cultural items that are popular among people	.772		
	I prefer to choose electronic items that are popular among people.	.814		
	I prefer to choose popular items	.866		
	I think that popular items are quite reliable	.856		
	I am comfortable to follow others recommendation if I am not sure	.769		
Reputation	Many people seem to visit the hospital.	.801	1.721	8.606
	Many visitor of the facebook click the button, like."	.823		
	People evaluate this hospital favorably.	.686		
	Hospital users share their personal story in the facebook of the hospital.	.720		
SNS usage	I enjoy to visit SNS page.	.822	1.444	7.220
	I often write something in SNS page.	.903		
	I often believe the information from SNS.	.733		
KMO = .929, Chi-Square = 7929.552, df = 190, p<.000				

Table 2. Compare clusters (3 segments/4 segments)

Factor	Trust	Reliable source	Reputation of SNS	Usage SNS	n
Cluster1	3.86	4.41	3.92	3.57	160
Cluster2	4.70	3.55	4.42	2.33	129
Cluster3	5.45	5.05	4.50	4.33	208
F-value	256.012***	94.516***	9.248***	82.939***	
Factor	Trust	Reliable source	Reputation of SNS	Usage SNS	n
Cluster1	4.81	3.37	4.27	2.64	106
Cluster2	5.69	5.32	5.38	4.64	108
Cluster3	4.36	4.40	3.82	4.28	181
Cluster4	4.37	4.77	3.99	2.14	102
F-value	39.034***	127.805***	71.551***	236.614***	
p<.000***					

Table 3. Summary of discriminant analysis

Function		**Eigen Value**	**Percent of Variance Explained by function**	**Canonical correlation**	**Wilks' Ramda**	□
1		1.290	55.4	.751	.214	759.252***
2		1.040	44.6	.714	.490	351.140***
Standardizes Canonical Discriminant Function		SNS			Function1	Function2
	Trust			.286	.959	
	Reliable source			.866	-.250	
	Reputation of SNS			-.314	.205	
	Usage of SNS			.858	-.168	
Cluster case 1		Predicted group membership			Total	
		2	3			
Cluster	1	157(98.1%)	2(1.3%)	1(0.6%)	160	
Cluster	2	0(0.0%)	127(98.4%)	2(1.6%)	129	
Cluster	3	2(1.0%)	0(0.0%)	206(99.0%)	208	
98.6% of original grouped cases were correctly classified						
Function		Eigen Value	Percent of Variance Explained by function	Canonical correlation	Wilks' Ramda	
1		1.467	45.8	.771	.116	1058.437***
2		.911	28.5	.690	.287	614.065***
3		.823	25.7	.672	.549	295.392***

Standardizes Canonical Discriminant Function			**SNS**				Function1	Function2	Function3
		Trust				.183	.439	.632	
		Reliable source				-.028	.641	-.761	
		Reputation of SNS				.167	.797	.431	
		Usage of SNS				.989	-.107	-.118	
Cluster case		Predicted group membership						Total	
		1	2	3	4				
Cluster	1		97(91.5%)	2(1.9%)	2(1.9%)		5(4.7%)	106	
Cluster	2		2(1.9%)	103(95.4%)	1(0.9%)		2(1.9%)	108	
Cluster	3		1(0.6%)	0(0.0%)	180(99.4%)		0(0.0%)	181	
Cluster	4		1(1.0%)	0(0.0%)	1(1.0%)		100 (98.0%)	102	

* 96.6%of original grouped cases were correctly classified

Table 4. ANOVA results

Items	**<Question Mark> Cluster1 High Usage and Low Impact group (n = 160)**	**<Soon to be SNS lovers> Low Usage & High Impact group(n = 129)**	**<Social Media Lovers> High Usage & High Impact group (n = 208)**	**Total**	**F**
It seems that this hospital provides relatively good quality of service	3.89a	4.44b	5.15c	4.56	81.902***
The facility seems to be comfortable for patients.	4.09a	4.53b	5.21c	4.67	72.743***
The staff of the hospital seems to be kind.	4.09a	4.53b	5.16c	4.65	56.306***
Overall, the medical technology of this hospital seems to be good.	3.99a	4.49b	5.19c	4.62	86.027***
I would recommend considering this hospital to those who look for a reliable hospital.	3.80a	4.17b	5.11c	4.44	82.819***
Given the chance, I would like to use this hospital.	3.83a	4.26b	5.15c	4.49	77.266***

Wilks Ramda =. 631, F = 18.053, p<.05*, p<.005**, p<.001***

overall satisfaction (m = 5.19) and intention to use (m = 5.15) were the highest for the cluster 3.

Finally, based on the results, each cluster was named as follows; the cluster 1 was named as <Question Mark: High Usage and Low Impact group>; the cluster 2 was named as <Soon to be SNS lovers: Low Usage and High Impact group>; the cluster 3 as <Social Media Lovers: High Usage and High Impact group>. Figure 1 visualizes the tree clusters based on the results. In cluster 1, the average of items that measured the level of 'SNS usage' was greater than those in cluster 2. However, the impact of social media marketing was the lowest among three groups. In cluster 3, items that measured 'SNS usage', 'reputation' 'trust' and 'reliable source' were all higher than those in other clusters. That means, this group uses SNS heavily and at the same time, is influenced the most by social media marketing. In cluster 2, the mean scores of items that measured 'SNS usage' were the lowest among three groups. However, it was noticed that social media marketing was more effective compare to cluster 1 where 'SNS usage' is much greater than cluster 2.

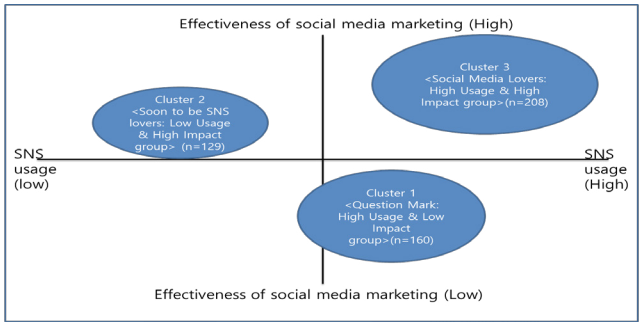

Figure 1. 3 clusters based on results.

5. Conclusions and Discussion

Social media marketing enables service providers to present their products/services and maintain social connections with customers more easily than ever before. Marketing through social media sites has been suggested to be very powerful as social media users are exposed to brand-related messages willing to interact with a company more frequently. However, despite its significance, limited research has been conducted to understand social media users deeper and to identify the effectiveness of SNS marketing. Therefore, to study the effectiveness of SNS marketing, this research attempted to segment customers based on the response of social media and usage. As a result, this study identified three groups; <Social Media Lovers>, <Soon to be SNS lovers> and <Question Mark>.

In cluster 1 <Question Mark: High Usage and Low Impact group>, the level of SNS usage was not the lowest among three groups, however the effectiveness of social media marketing was the lowest. For this group, marketer should put efforts to link social connectivity among people rather than just keep sending messages. Marketers provide users with useful information related to health so as to make them to be sure that social media messages are reliable.

In cluster 2 <Soon to be SNS Lovers>, individuals take the messages provided by a company and other customers seriously and evaluated the company positively, even though, their usage of social media was the lowest among three groups. It is interesting to see that participants who do not use social media surprisingly regarded the social media messages as reliable. For this group, the content of messages should be customized. Marketers encourage individuals to be engaged with brand more closely.

In cluster 3 <Social Media Lovers>, individuals tend to enjoy social media sites and also are influenced by social media marketing. The usage of social media sites were the highest and responses towards social media marketing was the most positive among three groups. This group considers others' 밂 like? clicks very important and reliable. Public opinions written by users were also regarded as reliable. This group is the most effective target from the company's perspectives. For this group, marketers encourage people to comment their experiences and information with others through social media sites. The power of word-of-mouth is expected to be great. Some incentives may urge them to spread positive messages to their friends or relatives. The more experience or information they get, the better social media marketing will be.

This study empirically investigated users' responses to social media marketing in the case of hospitals. Hospitals are relatively high-risk involved service area where consumers are not able to evaluate easily. Further study is needed to investigate other areas, such as family restaurants, to see whether respondents' segmentation is similar to this study. This study relied on panel of a research company. Thus the external validity of our findings can be reinforced by further studies. Furthermore, more reliable scales are needed to research in the further studies.

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