

RESEARCH ARTICLE

**An Empirical Analysis of Online Social Network
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An Empirical Analysis of Online Social Network Determinants towards Business Prosperity

M Jamalzadeh*, N Behravan, S Espahbodi, R Masoudi

Department of Management, Multimedia University, 63100 Cyberjaya, Selangor Darul Ehsan, Malaysia.

*Correspondence to: Morteza Jamalzadeh, a.m.jamalzadeh@gmail.com

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Abstract

Exponential growth of the internet has drawn people's attention toward social network sites (SNS) all around the world. On the other hand, the emergence of new social media and technologies gives businesses the opportunity to change the way of communication with their customers. Thus, many businesses strive to invest on SNS to create values for themselves. This paper tries to investigate how companies can achieve business values through online SNS. The study explored the efficiency of SNS through which the links between social network determinants and business success was illustrated. We proposed a conceptual framework to accurately measure inter-connection between efficiency contributors of SNS towards business prosperity. The research provided empirical evidences to verify the customer communication management (CCM) and promoting factors as strong indicators for efficiency of SNS. The study also found out significant positive interaction between SNS' efficiency and gaining business success via CCM and promoting determinants. The introduced framework and the respective results could have the potential to lead business development, sustainable profit and business prosperity as well.

Keywords: Business prosperity; customer relationship management; social network sites.

1. Introduction

In the olden days, business owners considered locations as an important factor for launching a business. Those businesses usually located in high-populated places of the city, which were easily observable in the public eye. With the advent of various Media, business owners tended to demonstrate their abilities in social media. Experiencing a period of glory for a business, demands seeking for satisfied customers, and thus customers are considered firm's capital. As the main idea of social capital, social networks encourage people to have collaboration and reliability in their communications and bring people out from their isolation and solitary confinement. Social capitals are the collection of existence norms in the social systems, which caused enhancing in social member collaboration and shrinking the cost of exchanging and communication [1]. Moreover, the World bank defines social capital as a phenomenon, which is the consequence of the impact of social organizations, humans' relationships, and cultural norms on quantities and qualities of social interactions [1]. Referring to organization experiences, social networks have a significant influence on economic growth, and expansion in different countries. In general, social networks comprise the collection of various concepts like trust, which caused optimum communication and participation among social members and ultimately provides their reciprocal benefit [2]. Joining in social networks will lead higher collaboration to reach identical goals between participants when they have some values in common.

In addition, advertising made increasing awareness to products and services; however, with consulting and personal advices these purchasing processes are going to fulfill. More than 4000 empirical studies posited a permanent role of social networks in a distributing and expansion of products and various services like books, stock markets and so on [2]. Word of mouth (WOM) marketing presents a free service to the organizations. Therefore, the best marketers utilize the power of social networks in their marketing competition for promoting new products and services and get to ensure from market saturation of the former products [1]. Social network sites (SNS) is integration of web-based services, which allows individuals to create public profile. Social networks provide this opportunity for individuals to share their interest, and extend communication [3]. SNS cater for various features to manipulate user's necessities. The users were allowed to present themselves, embark on friendship with other users and retain their connections, share and search information [4]. The marketer experts of any organization regarded a high-populated place as an appropriate area for showing up their new strategies to grab the customer's attention. Therefore, these marketers concentrate on social websites due to potential

opportunity among huge congestion of individuals. The SNS like Facebook, MySpace, and YouTube emerge to the top 10 in terms of traffic [5]. Thus, these websites can be lucrative for businesses to advertise their products or services [6]. Each online SNS has its own primary features, which let their users forming online communities, allowing interaction among members within communities, and sharing user-created content like user's outlook, video, picture, and giving and receiving messages. These are basic features of a SNS, which provided by all social networks but in different ways and different degree of sophistication [7]. Many social web sites organize their data in terms of people, groups, commercial pages, technology, world and business, science, gaming, lifestyle, entertainment, and sports and allow users to browse through each category of data [8]. Web technology has a crucial role in the process of information diffusion extensively [9].

A social network system is developed to reinforce and reform knowledge creation, sharing, retrieval and storage [10]. A knowledge creating activities take place when a connection or conversation comes up among members. In order to have the ability of controlling organizational knowledge, organizations run this kind of information system. Social networks can be applied in order making business related connection easier and present a useful supporting platform knowledge creation and knowledge sharing activities [4]. The SNS provide some features and tools presented to the members to enhance their communication beyond the functional obligations. The main objective of SNS is knowledge sharing, so that organizations use this service to have higher productivity based on efficient decision-making, problem solving, innovation, and creativity, which reveals in a way that brilliant for the market [4]. Thus, knowledge can be expedited from the well-experienced experts to a new inexperienced person without any barrier. Moreover, there is taxonomy of groups, whom join in SNS, including individual users, businesses, and government [7]. Business approaches of joining SNS are promoting and customer relationship management (CRM), corporate intranets, and external peer networking [7]. There are bodies of literatures, which focused on how SNS can reform their CRM and explore whether SNS are a good place for performing marketing strategies. In this paper, we specifically persuade to explore the efficiency of online social networks and its influence on business prosperity in both customer communication management (CCM) and promoting aspects and to observe which aspect can be more effective on business expansion. In this paper, we conducted following structure. In the first step, we scout out online social network from two CCM and promoting perspective, which are discussed in detail. In second section, we discussed the research building block, and finally, we analyzed the empirical data to ascertain the effectiveness of social network on business prosperity.

2. Review of Literature

2.1. Efficiency of social network on business

Theoretically, social networks positively pertain to performance of groups. However, some studies reveal that the performance is contradictory. The quality of social networks can promote effective norms, restrict the negative external impact and reinforce the positives effects [11]. Chan believes that advertising through social networks might be very effective and contribute for promoting the company service. Even spending a little amount of money on advertisement on social networks could bring luminous consequence. Meantime, social networks provide very useful information about users for advertisers. These users' information permit advertiser to easily reach their target market, and it would be the most effective advertisement through the internet [12]. Leaving aside, the ability to scale the size of a Facebook campaign according to the size of the budget available is another advantage over traditional marketing campaigns [13]. This advertisement brings brand awareness and makes people join their community in social networks to chase their interest and passion [14].

From marketing perspective, the internet is an important factor in reforming organization relation with their customers. In as much as CRM getting better, the level of consumer satisfaction increased and satisfied customers usually do not switch to other rivals. As a result, it is hard for other competitors to obtain higher market share or makes it difficult for them to enter the market. Implementing online CRM leads to competitive compensation, and it is estimated to maintain a powerful and long-term relationship with customer [15]. SNS is capable of providing an environment for organizations and users to create customer value and construct a relationship with customers in the social network, which lead to collaboration or co-production [15]. Bonchi also argued that many CRM activities can be done via social networks. In addition, successful e-CRM is vital for firms to boost consumer satisfaction and loyalty, customer retention, and either online or offline sales' revenue [16]. Moreover, better customer relationship impact positively and directly on frequent repurchasing, lower propensity to switch for

other rivals and lead to business prosperity (higher revenue) [15]. There are two main SNS efficiency aspects toward achieving business success namely; CCM and the promotion aspect of a social network. Each aspect is discussed in the following sections.

2.1.1. Social networks and customer communication management (CCM) aspect

2.1.1.1. Business and customer connectivity plan

In this paper, we investigate different aspects of SNS that can help the organizations to have better communication with their customers. CRM helps the firms to establish better ties with their customers. This perspective makes the firm to satisfy customers, makes them to be loyal, and try to recognize key user and giving them values to be a free promoter for the company. Many companies open a fan page in most SNS to facilitate company relation with their current and potential customers. Today marketers set connecting plans associate with their customers in the head of their marketing strategy in order to interact with customers and ask them to participate in the company's plans. Thus, company's fan pages can be used for holding polls, promotion announcement, new production announcement, drawing announcement and voting for the company in order to measure customer satisfaction. Lack of such a measurement's ability prevents a firm to meliorate its activities. This kind of communication gives firm marketing authorities the idea to estimate customer's expectation. The customers' expectation is not recognized except perceiving customer's cognitions and analyzing the customer's impressions. Corporations should be able to forecast their customers' needs and give them their proposal before anyone else does [17]. Providing customer's needs indicate that the company's CRM works properly and affects directly on customer satisfaction and customer loyalty [18]. As an outcome, explicit relation between customer satisfaction and firm's revenue will lead to business prosperity as well [19].

2.1.1.2. Word of mouth in social network

Word of mouth communication is a major part of online customer interaction, which happens frequently in cyber forums counted as basic forms of social networks. This kind of communication can help for evaluation and influencing on purchasing decision. It can make you resolute in your intentions, or make you to give up your beliefs. Keller believed 90% of WOM occurred in offline place and 15% of online conversion happens in USA [20]. Companies always indemnify from dissatisfied customers who are silent customers in some situations. Customers who are dissatisfied with company product or service rarely discontent directly but try to convince others not to experience the same. Regarding to previous papers, purchasing process will fulfill mostly by advices from trusted people. Furthermore, individuals are willing to value answers from people who they trust or people trusted by people they trust [21]. The social networks make a social affiliation and trustful place for sharing your perception, and any complaint or compliment about different subjects can influence other people. Therefore, a purchase advice tremendously effects on the circle, which they are trusted user. WOM provides requirement information for product, performance of product and can influence hugely on customer purchasing decision-making [22, 20]. Cyber Atlas in 2009 announces that 84% of internet surfers have membership ID at least in one SNS. The popularity of this kind of websites makes the marketer to consider them as a head of their plan. On social networks, companies are able to predict churn In addition, in an offline environment, there are many obstacles to recognize their dissatisfied customers. These customers would indemnify the company's reputation due to their dissatisfaction, and this can be getting worse when the receiver is involved in WOM conversation rather than watching an advertisement [20]. Even one WOM message on social networks has a potential to influence many viewers [23]. Linkage between company's fan page and users gives the organization this opportunity to observe the customer shared status and consider whether he or she shares something about the company. The users can broadcast a message to a large number of people, and able to view and respond to messages posted by other people at any time [7]. This kind of communication is a direct way of WOM. Referring to CRM, corporations can measure the rate of customer satisfaction. Regarding notion "Word of mouth is essence of SNS" social networks give this opportunity to their members to interact with others. In addition, such positive WOM considers as a well sign for a company, but negative one cannot be regarded as a bad sign, because the company can recognize its mistakes and try to remove them. Therefore, in consequence, companies can stabilize their position firmly. SNS has an enormous influence on individuals' opinion and judgment. People, especially youngsters, tend to trust what they see on these online communities instead of traditional media [9]. Abetting the rumors can be a menace for a firm in the social networks but based on attribution theory, when a message export out of a user, the message

assessment is conducted by others to see whether the message contains accurate content or not. If scarcity of credibility is observed in the message, it will lose its persuasive power [24].

2.1.2. The promotion aspect of a social network

2.1.2.1. Finding key user

Another privilege of these fan pages for firms is that they can identify key users who are loyal to the company and can influence on their close connections. Based on the study [25], the best marketing strategy is to let customers themselves to be marketers. The study posited that individuals with common interests communicate to each other, so they have same attitudes, beliefs or interests. Linked customers probably are like-minded, and like-minded customers tend to buy the same products [20]. Targeted marketing through a virtual social network can be much more efficient and cost-effective [25] when key users can be identified. The maximum awareness of a product or service can be transferred with minimum expenses, if key users were identified properly. They can propagate the information to the other like-minded users. This would be an appropriate way of information diffusion, which influencing key users' intention purpose based on trust of other people. Almost all the key users were satisfied with the organization, so their trust to the company stabilizes grows and encourages them to use the service and act like a marketer for the company [26]. These positive experiences must be propagated among their close persons. SNS are a very exclusive place for sharing their positive experience with their close friends and trust is playing a role in facilitating and maintaining a long-term relationship [27].

2.1.2.2. Advertising

One of the important challenges for online advertisement is adaptive personalization [28]. Once individuals decide to join these websites, they encounter many inquiries asked by SNS. These websites need this information in order to devote appropriate advertisement for each individual. The proposed platform relies on characteristics supplied by a user in his/her profile, so that the system can select the best-matched advertisement based on the user's interests [28, 29]. The administrator can allocate the advertisement in social network based on nationality, location, gender, occupation, age, hobbies, and interests. Ultimately, the advertisement specification and user's profile can be matched regarding the information which user filled up earlier [29]. Placement through a social network is lucrative for advertiser and that particular social network. Advertisers get access to the desired target market, and SNSs can cover their expenditure or get reasonable revenue based on their number of participant. Many factors are applied until an advertisement becomes effective like ads' position, ads' creativity, reliability of ads and ads' content [30]. There is another kind of advertisement, which appears based on keyword like Google's ads. This kind of advertisement called contextual advertisement, and they are very effective, mostly because of their matches with user's searching content [31]. In 2006, Google signed a 3-year \$900 million agreement with MySpace to sell ads on MySpace [32, 30]. Making ads based on this content inherently less relevant to the user and over time will reduce user attention and incentive for clicking. Unrelated ad impressions are not a good scenario for both advertisers and social network providers [31]. Ad's programs should begin exploiting user activity on public venues (SNSs) such as forums and marketplaces where intents are readily expressed and representative of a user's current need [31]. Maybe most of the social networks launched in US, but they are popular in other regions of the world, for example, more than half of the internet users in Brazil joined Orkut, or many Arab people, especially people of Egypt, became members of Facebook. These regional members can be a good asset for the local business to present their capabilities and promote their self. Thus, significant traffic on SNS in a specific region cause the local businesses' propensity to advertise into such websites due to the ability of advertisement filtering relevant to a particular region. Advertising effect that can be evaluated by companies is divided into two faces: 1 - evaluation of sales effect and 2 - evaluation of psychological effect [33]. The evaluation of advertising effect based on sales' effect is known as an economic effect, which defined the variation of the sales level before and after the advertising. In addition, referring to the psychological effect companies evaluate the effect of advertising on consumer's psychology; primarily focus on variation or effect on consumer's cognitive behavior and psychology.

3. The Research Building Block

To date, there are diverse dimensions of testing the effects and influences of social network websites on business success. Many methods have been used by various authors to describe and represent a comprehensive building

block to explore effectiveness of SNS on business. This study tries to introduce an exhaustive framework including social network efficiency determinants (Figure 1) which enable us to examine effect of online social network on business success. This framework can lead to inclusive insights about the influence of both CCM and promoting aspects of SNS on business prosperity. The research integrative building block was adhered in Figure 1.

To comprehend the model, the study presents efficiency of social network website into two main perspectives. The CCM and the promotion aspect of SNS introduced as independent variables to predict the dependent variable. The CCM aspect comprises two determinants called connectivity plan and WOM. These two determinants under CCM are examined through seven questions using Five-Likert method. The promotion aspect involves finding key user and advertising as its determinants. The Five-Likert method asks eight and seven questions respectively to key user and advertiser. The Five-Likert method is used to capture the data from managers and business owners. Additionally, to evaluate the business success as dependent variable the respondents are required to answer eleven questions using Five-Likert method. The proposed framework for the study is adhered as following.

According to the proposed framework above, the study explores social network websites based on two main CCM and promoting aspects, which each comprises two SNS determinants and examined the social network websites' effectiveness on business success. Consequently, different factors of each determinant (WOM, Connectivity Plan, Advertisement, and Finding Key User) will be examined to determine social network websites' effectiveness towards business success. According to our framework, the study presents four hypotheses to examine business prosperity through SNS determinants. These hypotheses were adhered as following:

- H1:** There is a positive relationship between connectivity plans in SNS and business success.
- H2:** There is a positive relationship between WOM in SNS and business success.
- H3:** There is a positive relationship between finding key users in SNS and business success.
- H4:** There is a positive relationship between advertising in SNS and business success.

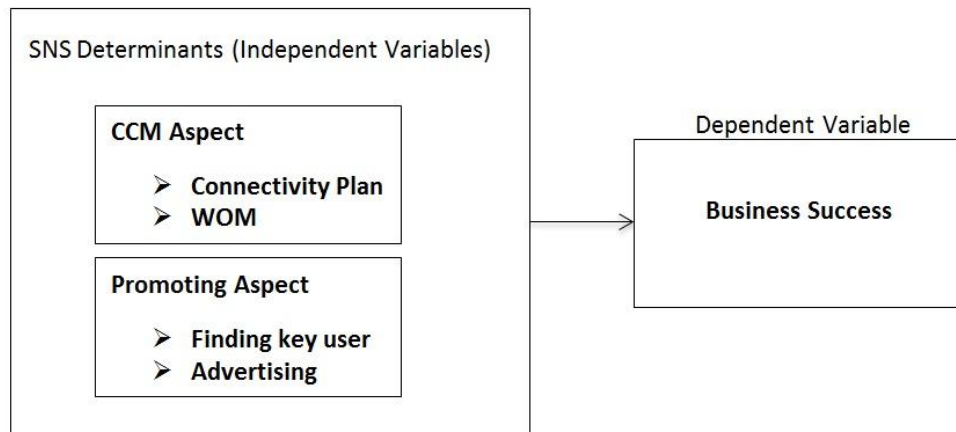


Figure 1: The research building block.

4. Data Collection and Analysis

The study developed the research instruments based on relevant literature and interviews with the managers of some businesses (service category) in Klang Valley, Malaysia. We conducted a pilot test with 15 managers and business owners, which use SNS (like Facebook and MySpace) in their business. We did pilot study to assess the relevancy of research items to respected variables. We then developed and modified our questionnaire based on results of the pilot test.

Regarding [34], there are several advantages to develop an online questionnaire such as lower cost, faster responses, and limitless geographical sampling. Thus, we decided to disseminate online survey as the best suitable approach in our study. We sent our questionnaire to companies' managers and business owners using SNS. It takes three weeks to collect our responses from 150 managers and business owners. We dropped 39 questionnaires, which the responses were incomplete and faulty. Thus, we had 111 acceptable online questionnaires from

managers and business owners for our analysis purpose. The respondents' descriptive statistics are shown in Table 1 in details.

Table 1: Respondents' descriptive statistics.

		Frequency	Percent
Gender	Male	75	67.6
	Female	36	32.4
	Total	111	100
Age	<25	26	23.4
	25–35	56	50.5
	>35	29	26.1
	Total	111	100
Education	Diploma	4	3.6
	Bachelor Degree	38	34.2
	Master Degree	37	33.3
	MBA	22	19.8
	Others	10	9.0
	Total	111	100
Position	IT Manager	38	34.2
	Vice President or Deputy	30	27.0
	Marketing Manager	24	21.6
	Sales Managers	19	17.1
	Total	111	100
	IT Manager	38	34.2

The result shows that the majority of respondents were male (67.6%) and others were female (32.4%). More than half of our respondents (76.6%) have greater than 25 years of age and 96.4% of them were educated people (at least degree holders). In terms of position, the IT managers with 34.2% were the top group of respondents in our study. The Vice President or deputy, marketing managers, and sales manager were ranked after IT managers with 27%, 21.6%, and 17.1%, respectively.

The study also assessed the internal consistency reliability of the variables through alpha test method. The result of alpha test shows the range of between 0.895 and 0.934 for all variables. Regarding [35] satisfactory level considered as 0.700 and above which shows the reliability of our measures (see Table 2). Besides, the Kolmogorov–Smirnov and Shapiro tests depict the variables' distribution (including the social network website determinants) is normal.

In the next pace, the study used the multiple regression analyses to test the research hypotheses. Pearson's correlation analysis was conducted, which assesses the correlation of variables for the interval or ratio scales measurement. The result of Pearson's test shows linear correlation among all variables. The summary results are illustrated in Table 2.

Table 2: Reliability and Pearson correlation test.

	Cronbach's Alpha	Pearson Correlation				
		1	2	3	4	5
1 Business Success	0.931	1.000				
2 Connectivity Plan	0.934	0.865	1.000			
3 WOM	0.896	0.791	0.880	1.000		
4 Finding Key User	0.895	0.857	0.833	0.711	1.000	
5 Advertising	0.932	0.863	0.982	0.863	0.848	1.000

The Linear regression by using Enter method shows the R square of 0.816, which means the predictors (Independent Variables) regarding the model can explain 81.6% of the dependent variable. In addition, the test for hypotheses 1 indicates strong positive relationship between connectivity plans as independent variable and business success ($r = 0.934$; $p < 0.05$). There are same results for hypotheses 2, which show significant relationship between WOM in SNS and business success ($r = 0.896$; $p < 0.05$). Thus, we can accept hypothesis 1 and 2, which means that the CCM aspect of SNS can be a predictor for business success. The test for hypotheses three and four indicated positive relationship between finding key users and advertising in SNS and business success as the statistic has drawn ($rH3 = 0.895$, $rH4 = 0.932$; $p < 0.05$). Thus, the results also supported hypothesis 3 and hypothesis 4, which indicated the promoting aspect of SNS as another predictor for business success.

To sum up, four determinants or efficiency indicators of SNS were categorized and then tested under two main aspects namely CCM and promoting aspect. The result shows that there are strong and positive correlations between SNS determinants and business success. However, to understand which determinant act more significantly in the model, the study took stepwise method. The results of this test indicated that the three social network efficiency determinants (connectivity plan, finding key user, and WOM) are positively and significantly correlate to business success. The result is represented in Table 3.

Table 3: The result of stepwise analysis.

	Model	B	Standard Error	t	Sig.
1	(Constant)	2.608	1.962	1.329	0.187
	Connectivity Plan	1.375	0.077	17.958	0.000
2	(Constant)	-0.765	1.808	-0.423	0.673
	Connectivity Plan	0.781	0.121	6.460	0.000
	Key User	0.674	0.114	5.896	0.000
3	(Constant)	-2.753	2.033	-1.355	0.178
	Connectivity Plan	0.516	0.177	2.919	0.004
	Key User	0.693	0.113	6.127	0.000
	WoM	0.329	0.162	2.033	0.044

Model 3 represented in Table 3 indicated that the $\beta_1 = 0.516$ with significant level of $0.004 < 0.05$ for connectivity plan. The $\beta_2 = 0.693$ with significant level of 0.000 for finding key user and finally $\beta_3 = 0.329$ with significant level of 0.044 for WOM. Thus, finding key user, connectivity plan, and WOM are the most significant indicators toward the business success from top to down respectively.

5. Discussion

In our hypotheses' testing, we examined whether the SNS determinants are associated to business success. The study collected the data from managers and business owners in service industry in Kelang Valley, Malaysia. Two main aspects were considered for the purpose of this study, including CCM and promoting. Each perspective comprises determinants, which can show the impacts on business success for those using SNS. According to the results, four hypotheses of this study were supported through Pearson correlation tests. Additionally, the link between efficiency and using of SNS in the business was significant and supported by four SNS determinants. This shows both CCM and promoting aspects are strongly associated and can predict the business success. The study also found a significant link between three determinants of SNS including finding key user, connectivity plan and WOM to business success. This implies that CCM aspect can be a better indicator of business success and CCM effective management may ultimately lead to economic gains and business success.

To conclude, in this study, we examined the efficiency of SNS based on two main perspectives to understand how they can affect business success. Based on our research framework and hypotheses, we verify the strong relationships between efficiency of SNS and business success. We also ascertain strong and positive relationship of the SNS determinants (including connectivity plan, finding key user, WOM, and advertising) with business success. However, it is expected that there is stronger relationship between CCM aspect (connectivity plan and WOM) and business prosperity. Based on our findings, we suggest improving CCM system, including

connectivity plan and WOM that may lead to better business success while efficiency of SNS plays a significant role in this arena. Yet, the businesses must have this in mind that finding key user is associated very strongly toward achieving business success, especially in service industry in Malaysia. This research is expected to be useful for those researchers who work on social network and business profitability issues. The results can also help managers, business owners, and business advisors to better implement business strategies through gaining profit and business prosperity.

There are numbers of limitations faced in this study. Although the data were collected from service businesses, we cannot generalize the results for other businesses' categories. In addition, since we collected our data through questionnaire, data biases may exist. Moreover, there are other contributors who could be used in our research model, but they are eliminated due to time and cost restriction. Future research can cover other contributors and determinants to more accurate prediction of business success through efficiency of SNS.

Abbreviations

CRM: Customer Relationship Management; CCM: Customer Communication Management; SNS: Social Network Sites; WOM: Word of Mouth.

Competing Interests

Authors have no competing interests.

Authors' Contributions

NB participated in literature review and designed the study framework. SE and RM carried out interviews and provided solid data for the study. MJ performed statistical analysis, reviewed and finalized the manuscript.

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