

Social Networking Sites as a Multimedia Tool for Brand Popularity – An Exploratory Study

Fedric Kujur* and Saumya Singh

Department of Management Studies, IIT (ISM), Dhanbad - 826004, Jharkhand, India;
fedrickujur@gmail.com, saumya.ism@gmail.com

Abstract

Objectives: To identify the role of content richness (video, photo and link) and time frame of the brand publication (time and date) as factors of brand posts popularity. **Methods/Statistical Analysis:** The data of 1488 brand posts were collected from the Face book brand pages of five international mobile companies popular in India. For analyzing the data, multiple regressions were used as tool using SPSS software. **Findings:** The result showed that image has the highest impact on the brand popularity in terms of likes and comments and shares. On the other hand, the video contents significantly increase the volume of likes and shares but fail to attract more comments. Similarly, the provision of the link in the content shows significant but has a negative impact on likes as it carries users to another page. But the link is significant in terms of attracting shares. The time of brand post- publication (non-working hour) is significant in terms of likes but has got negative influence. On the other hand, it has no impact on comments and shares. Finally, the result shows that the day of the brand posts publication (workdays) significantly increases the volume of comments, whereas, for likes and shares, the study did not find any support. **Application/Improvements:** This paper suggests strategies for brand posts popularity on Facebook which might be helpful for the Indian marketers and contributes to the existing literature on the management of marketing strategies for consumer engagement on social networking sites.

Keywords: Brand Popularity, Multimedia Tool, Social Networking Sites

1. Introduction

The internet access through telecommunication networks has accelerated the use of social media. It is consistently attracting the interests of the marketers to use this opportunity to promote their products or services, giving rise to the concept of social media marketing. Basically, social media marketing programs make an effort to create content that attracts attention and encourages users to share their product's opinions either positive or negative with one another in social interaction¹. Since the brand/company messages are shared from a trusted source, the content spreads very quickly among the people, as opposed to the brand or company itself^{2,3}. This form of marketing is also termed as word-of-mouth, meaning it results in earned media rather than paid media. Today social media platform is gaining increasing importance as it is relatively inexpensive platform for the organizations for their marketing campaigns^{4,5}. Moreover, this platform

facilitates increased communication, brand awareness and often improved customer services. Social media includes various media vehicles for transmitting information such as micro-blogging sites (Twitter), Social Networking Sites (Facebook, LinkedIn) and location based services (Foursquare) and so on⁶. Social Networking Sites (SNS) are gaining its importance as one of the most popular online activity among consumers worldwide.^{7,8} As per research literature, among various Social Networking Sites, Facebook has been growing rapidly over the years and all internet users worldwide are well aware of the Facebook and more than 60 percent of them have the account on Facebook too. Moreover, through SNS such as Facebook, consumers have taken much interest in spreading opinions rather than being message receiver from marketers⁹. Thus SNS has facilitated new ways of interacting with the information content where consumers can share experiences, opinions and knowledge with other members in SNS¹⁰. Therefore, a popular research

* Author for correspondence

theme involves investigating the factors that cause users to filter, process, exchange and distribute contents within this free marketplace of information¹¹.

According to the report, in 2013, the number of social media users in was 86.7 million and now it is estimated that in by 2017, it may reach the figure of 197 million¹². Therefore, the companies see the increasing opportunities to invest money in the social media to connect and build a strong relationship with customers through timely interaction¹³. Therefore, the companies need a suitable platform on SNS for interaction and the best-known example of this is Facebook Brand Pages (FBP) available on the Facebook platform¹⁴. In practice, the FBP is followed by media users by clicking the 'like button', which indicates that the media users like the brand in their social network. This process then enables new contents to be automatically sent from the brand to be posted to their personal Facebook newsfeed, where media users can interact with a brand by means of anecdotes, status, photos, videos or other brand-related contents that users can like, share or comment on with other followers of the brand or their own friends and relatives¹⁵. The study reveals that as the users following brand pages receive more information about the brand, they develop positive attitude and become loyal to the brand and tend to spread more positive word-of-mouth¹⁶. One good example is Nike with 22.6 million subscriber¹⁷. Nike established separate pages for each of their product lines to better target their different markets and incorporated the most famous slogan in their cover photo, photos shared and through a branded hashtag and used to frequently change their cover promotional photo to promote something new. Therefore, the marketers need to emphasize more on the factors that are responsible for achieving brand popularity among social media users. So that there can be a strategic use of SNS to gain maximum brand popularity.

Hence in order to augment extant literature in this nascent research theme, this paper seeks to investigate how the richness of the brand post (e.g. video, photo, link) and the time frame of the brand post publication (e.g. time and day) influence customers interaction and ultimately gives rise to brand popularity^{18,19}. A recent study showed that 80% users from total online social network users follow their favorite products, companies and services on Facebook and used Facebook companies and Facebook Brand Pages (FBP)²⁰. Therefore, five international mobile phone brands have been taken from the FBP for the study as these brands are very popular in India. The promotional

ads of these brands are daily posted on FBP on an average two to three posts in a day. The volume of likes, comments and shares on the brand page has been considered as the measure of the brand posts popularity. In fact, this paper has followed the established conceptual model of Sabate et al. for research in Indian context¹⁸.

2. Rationale of Study on Mobile Phone Companies

India has the second largest wireless network in the world. As on 31st June 2015, the gross telephone subscribers in the country was 1007 million covering total wireless subscribers of 981 million and wire-line subscribers of 26.15 million respectively. The overall tele-density was about 80 per cent with overall urban and rural tele-densities being 149.7 and 48.6 respectively. India witnessed a rise in manufacture of mobile handsets during the past decade. As per ICA estimates, at its peak India was producing approximately 155 mn units of mobile handsets in 2011-12, whereas domestic demand stood at nearly 180–200 mn units during that period. Almost 85% of the domestic demand was produced locally²¹.

Researchers opine that the consumers mostly depend on online social networks to get more credible and relevant information about the product (mobile phones) before buying²². Since this application allows consumers to get information regarding different models, features, prices, price comparison etc. it is well preferred. Moreover, through online SNS, consumers enjoys the interaction with other members and like to receive advice either positive or negative about different products or services^{23,24}. Hence, these two aspects i.e., the rise in the demand of mobile phones and the use of social media to access information, gives a base for the present study so that the mobile companies use better strategies to make their brand popular through SNS.

3. Social Networking Sites and Brand Post Popularity

Ever since the concept of social media has emerged, there has been a major shift from the traditional form of marketing to the social media marketing. In traditional marketing system, people are involuntarily confronted with the banner ads or TV ads whereas in the social

media marketing, people voluntarily choose to like the brand pages on SNS so that they get regular posts from the company. Since people choose to like the brand pages, they pay more attention to the brand posts and also the likes, comments and shares on the brand posts indicate that the brand fans are actively involved and it is visible to all. Since social media marketing attracts high attention and has worldwide reach capability, many research interests have emerged among researchers as to why people interact with the brand posts, what are the various factors that compel people to click on a brand post.

Sabate has identified two types of drivers/factors of the brand posts popularity in SNS i.e. soft criterion and hard criterion¹⁸. The soft criterion is qualitative in nature as it involves careful content analysis of texts, images or videos whereas the hard criterion is quantitative in nature as it enables computation of the frequency and timing a phenomenon that takes place. Moreover, it facilitates assessment of the richness of the content related to a post, by simply looking at the content type that complements the text (i.e., a picture, a video or a link to another website). Since the quantitative factors of the published content are easy to capture and process than the former ones, the present study considers only the hard criterion for identifying the drivers of the brand posts popularity in SNS. This includes richness of the content (images, videos and links) and the time frame of the published content (day of the week and time of publication).

4. Richness of the Content

Richness can be defined as “the way in which an environment presents information to the senses”. The richness of the message can engage the senses in two ways i.e. breadth and depth. Breadth is the number of different senses that a medium can engage and depth is how closely a medium can replicate parts of the human sensory system²⁵. The richness of the message generally termed as vividness of the online content which includes videos, images, statuses, links^{16,26}. But the degree of richness may differ on the basis of stimulating power to multiple senses²⁷. For example, a video can be considered as rich media than the image or text messages, since it captures both aural and visual senses. The study also reveals that the high level of richness of the content tends to increase the users propensity to look at the content

and exert positive and enduring attitude toward the brand posts and vice-versa. The present study focuses on differentiating the type of the content (images, videos and links), since this process avoids any potential subjective bias on how richness is perceived in the user’s eyes. Thus, the proposed hypotheses are:

H1a - Contents including images are more likely to produce higher levels of brand posts popularity.

H1b - Contents including videos are more likely to produce higher levels of brand posts popularity.

H1c - Contents including links are more likely to produce higher levels of brand posts popularity.

5. Time Frame of the Published Content

In one research the concept of scheduling was considered as an important element of the marketing strategy, since it could potentially lead to increased revenue²⁸. Thus, time of published content influences the effectiveness of the brand posts. Therefore, it is very essential for the marketers to decide when to upload the brand posts on the Facebook brand pages so that the brand posts doesn’t get lost. Because Facebook profile walls are overloaded with content coming from multiple sources (e.g., posts from friends, other pages, etc). However, some studies argue that the engagement rate is higher during the working hours¹⁸ while some argue that if posts are uploaded when users are free (in peak hours), then the probability of the posts to be liked or commented or shared is higher¹⁹. Because people usually come online in their leisure time, hence, the brand posts will appear at the top of their walls. Thus it can be hypothesized as:

H2a - Content created during non-working hour produces higher levels of brand posts popularity.

Previous studies show that the user’s activity on the Facebook is carried out during the workdays (Monday to Friday)²⁹. On the other hand, another study confirmed that the online activities of users in weekend dropped the Click-Through Rate (CTR) significantly³⁰. But since the present study focuses on the five international brands which are popular in India, the result might vary in this context. Thus we propose:

H2b - Content created during workdays produces higher levels of brand posts popularity.

6. Control Variable

Firstly advertising literature suggests that social features like number of friends or followers have a significant impact on commenting and liking activity which helps in diffusion of wall posts to larger extent. The notion behind this may be greater is the number of followers of a brand, more would be the impact of its posts on audience^{18,31}. Thus in order to control this effect, the study has considered number of follower as control variable.

Secondly, message length may also influence the CTR of the brand posts either positively or negatively^{19,32}. Thus, in order to control this effect, the study has considered length of the message as control variable.

7. Research Methodology

Firstly, the data collection was done from the 5 international mobile companies which are very popular in India. Thus we can say that this research is conducted from the Indian context. The data of 5 brands were collected from Facebook brand pages ranging from 1st June to 31st August, 2015³³. These brands used to upload their brand posts daily on FBP on an average 2 to 3 posts daily. This yielded a collection of 1488 brand posts. For the description of the five mobile companies see Table- 1.

Secondly, the study undertook the operationalization of the variables by coding the brand posts collected from the FBP. For coding, it followed a set of rules earlier done by various researchers^{15,18}, i.e., in terms of richness of the brand posts and time frame of the brand publication. For the richness of brand posts, the presence of images, videos or links in the brand posts were coded as 1 and the absence of these variables were coded as 0. This process

was done for all three variables separately by examining each brand posts. And for the time frame of the brand publication i.e. time of brand publication was divided in 3 parts in order to make better interpretation of the result. In India, usually the working hour is 8 hours a day. Therefore, the study divides time in three parts i.e. from 8 AM to 4 PM (working hour) and 4 PM to 12 AM (non-working hour) and 12 AM to 8 AM (sleeping hour). The brand posts which were posted 8 AM to 4 PM were coded as 1 (working hour) and from 4 PM to 12 AM as 2 (non-working hour) and from 12 AM to 8 AM as 0 (sleeping hour). On the other hand, the day of the brand publication was divided into two parts i.e. workdays (Monday to Friday) and weekends (Saturday and Sunday). Workdays were coded as 1 and weekend was coded as 0. See Table 2.

Thirdly, the proposed hypothesis was tested by taking statistical tools like SPSS using multiple regression analysis. It was found that the model considered here was not properly fit with the original data because the residuals were not normally distributed. In order to improve model fit the data for dependent variables i.e. the number of likes, comments and shares were converted into standardized form by taking logarithm.

8. Results and Interpretations

First of all, the presence of the multicollinearity was checked in the multiple linear regression model. The level of tolerance was fixed for all dependent variables is Tolerance>0.1(or VIF < 10). In the present study, there was no such issue of multicollinearity, since it was above the threshold. Further, the study conducted the test of homoscedasticity and normality of residuals with the Q-Q-Plot of z*pred and z*presid of dependent variables

Table 1. Description of the mobile companies

Mobile brands	N	Likes		Comments		Shares	
		M	SD	M	SD	M	SD
Samsung India	286	2260.01	1091.84	77.85	24.27	64.39	14.91
Micromax India	423	2268.11	1058.8	71.81	26.72	89.62	19.38
Gionee India	259	2020.76	1233.08	44.68	17.3	72.07	12.18
Asus India	301	2559.44	1196.52	48.93	16.27	49.33	13.92
Sony Mobile In	219	2739.59	1359.52	33.23	22.06	63.98	13.41
Total	1488						
Fans*		4714859.19	197601.19				
Message length*		138.08	45.47				

and it was found that there was no such tendency in the error terms³⁴.

Table 2. Operationalization of the variables

Media richness and Time frame of the brand posts		Frequency	Percent
Media richness	No Images (0)	312	21%
	Image (1)	1176	79%
	No Videos (0)	1281	86.09%
	Videos (1)	207	13.91%
	No Links (0)	350	23.52%
	Links (1)	1138	76.48%
Time frame of the brand posts	Time of posts		
	8 AM to 4 PM (1)	599	40.26%
	4 PM to 12AM (2)	863	57.00%
	12 AM to 8 AM(0)	26	2.74%
	Day of the week		
	Workdays (1)	1113	74.70%
	Weekends (0)	375	25.30%

The control variable i.e. number of fans was found to positively related to dependent variables with likes (beta = .550, P<.05), comments (beta = .430, P<.05) and shares (beta = .310, P<.05). Thus, it can be concluded that the number of fans positively influences the likes, comments and shares to increase or decrease. On the other hand, the

length of the message had no effect at all on either of these dependent variables.

8.1 Result of ‘Like’

With respect to like, the overall model was significant (F = 8.55, P<.001), hence this shows that linear relationship exists between variables in the model (in other word, R²≠0). Further, the study finds that the linear regression explains 12% of the variance in the data with adjusted R² = 0.12 and R = 0.36. The Durbin-Watson d = 1.79, which is between the two critical values of 1.5 < d < 2.5 and therefore the assumption can be made that there is no first order linear auto-correlation in our multiple linear regression data. Beta expresses the relative importance of each independent variables in unstandardized terms. Firstly, the study shows that only images, videos, links and Time are found to be significant predictors. Secondly, it shows that image has a higher impact on likes than videos (beta = 0.727, P<.05 and beta = 0.486, P<.05). Thus both images and videos are positively in support of H1a and H1b. On the other hand, link and time of brand publication have significant negative impact on likes with beta = -0.641, P<.05 and beta = -0.036, P<.05, supporting H1c and H2a (vide Table 3).

From the above result, a general opinion can be formed that image and video can contribute to large extent to increase the volume of the likes. In the present study, the beta coefficient of link shows negative influence on the likes. The possible reasons may be that although link carries more information about the brand but when people browse in the Facebook, they are least bothered to move to another page. Even the time of brand publication has negative effect on the like. This shows that the liking behavior of the users is very low in relation to timing. In

Table 3. Result of the multiple regression analysis

	Log Likes	P value	Log Comments	P value	Log Share	P value
Image	0.727	0.008	0.755	0.001	0.736	0.001
Video	0.486	0.025	0.079	0.762	0.717	0.004
Link	-0.641	0.001	-0.052	0.703	0.237	0.049
Time	-0.036	0.001	0.022	0.833	-0.069	0.501
Day	-0.315	0.226	0.061	0.036	-0.009	0.944
Fans*	0.550	0.001	0.43	0.003	0.31	0.024
Message*	-0.001	0.165	-0.001	0.491	0.001	0.11
Model fitness	F = 8.554		F = 5.808		F = 15.654	
	Adj. R ² = .115		Adj. R ² = .076		Adj. R ² = .201	

the hypothesis, the study had considered that when users have free time usually after the work in the evening hour (non-working hour), the chances of attracting more likes is high, but from the analysis, no significant differences have been found in relation to the working hour.

8.2 Result of 'Comment'

With respect to comment, the overall model was significant ($F = 5.808$, $P < .001$), hence this shows that linear relationship exists between variables in the model (in other word, $R^2 \neq 0$). Further, the study finds that the linear regression explains 8% of the variance in the data with adjusted $R^2 = 0.076$ and $R = 0.303$. The Durbin-Watson $d = 1.514$, which is between the two critical values of $1.5 < d < 2.5$ and therefore the assumption can be made that there is no first order linear auto-correlation in our multiple linear regression data. Beta expresses the relative importance of each independent variables in unstandardized terms. Firstly, the study shows that only image and day of the brand posts are found to be significant predictors of comment model. Secondly, it shows that image has a higher impact than day of the brand posts ($\beta = .755$, $P < .05$ and $\beta = .061$, $P < .05$), supporting H1a and H2b (vide Table 3).

From the above result, a general opinion can be formed that image can contribute to large extent to increase the volume of the comments. Here, videos and links have no effect on the comment. Hence in order to increase the volume of comments, funny brand related images and highly interactive brand posts like 'quiz competition' or 'fill in the blanks' with some offers or prizes, can be posted, so that people interact more. On the other hand, the study shows that the number of comments increases in the workdays. Hence the frequency of brand posts can be increased during workdays to get more comments.

8.3 Result of 'Share'

With respect to share, the overall model was significant ($F = 15.654$, $P < .001$), hence this shows that linear relationship exists between variables in the model (in other word, $R^2 \neq 0$). Further, the study finds that the linear regression explains 20% of the variance in the data with adjusted $R^2 = .201$ and $R = 0.463$. The Durbin-Watson $d = 1.687$, which is between the two critical values of $1.5 < d < 2.5$ and therefore the assumption can be made that there is no first order linear auto-correlation in our multiple linear regression data. Beta expresses the relative

importance of each independent variable in standardized terms. Firstly, the study shows that only images, videos and links are found to be significant predictors of share model. Secondly, the result shows that images and videos have a higher impact on the shares with $\beta = .736$, $P < .05$, and $\beta = .717$, $P < .05$. On the other hand, link has comparatively low influence on likes with $\beta = .237$, $P < .05$. Thus images, videos and links are positively in support of H1a, H1b and H1c. The time frame of the brand posts has no effect on the share model (vide Table 3).

From the analysis, it can be said that, content richness plays very important role to increase the sharing activity of the brand posts. A brand post that includes either the combination of the image and link or video and link is more likely to attract shares in Facebook. On the other hand, time and day of the brand publication showed no effect on the sharing activity of people.

9. Conclusion

This paper examined the richness of the content and the time framework of the brand post -publication as the motivating factors that might influence the brand post popularity on Facebook brand pages, used as a platform for social media marketing. The study has followed the existing conceptual model used in Indian context for studying in mobile phone companies so that comparison can be made from the aspect of countries and industries¹⁸. The result showed that image has the highest impact on the brand popularity in terms of likes and comments and shares. On the other hand, the video contents significantly increase the volume of likes and shares but fail to attract more comments. Similarly, the provision of the link in the content shows significant but has the negative impact on likes as it carries users to another page. But the link is significant in terms of attracting shares. The time of brand post-publication (non-working hour) is significant in terms of likes but has got negative influence. On the other hand, it has no impact on comments and shares. Finally, the result shows that the day of the brand posts publication (workdays) significantly increases the volume of comments, whereas, for likes and shares, the study did not find any support. In general, these findings might help the companies to prepare their strategies that trigger the activity of the Facebook users and drive long term brand adoption.

10. References

- Hennig-Thurau T, Gwinner KP, Walsh G, Gremler DD. Electronic word of mouth via consumer opinion platforms: What motivates consumers to articulate themselves on the Internet? *Journal of Interactive Marketing*. 2004; 18(1):38–52.
- Solomon M, Bamossy G, Askegaard S, Hogg M. *Consumer behavior: Buying: A European Perspective*. 4th ed. Financial Times Press; 2010.
- Huang JH, Chen YF. Herding in online product choice. *Psychology and Marketing*. 2006; 23(5):413–28.
- Dellarocas C. The digitization of word of mouth: Promise and challenges of online feedback mechanisms. *Management Science*. 2003; 49(10):1407–24.
- Chakradeo SN, Abraham RM, Rani BA, Manjula R. Data mining: Building Social Network. *Indian Journal of Science and Technology*. 2015 Jan; 8(S2):1–5.
- Goldsmith RE. Electronic word-of-mouth. *Encyclopedia of E-Commerce, E-Government and Mobile Commerce*. Khosrow-Pour M. editor. Hershey, PA: Idea Group Publishing; 2006. p. 408–12.
- Raamakirtinan S, Livingston LMJ. Identifying influential users in Facebook - A sentiment based approach. *Indian Journal of Science and Technology*. 2016 Mar; 9(10):1–9.
- Chua AY, Banerjee S. Marketing via Social Networking Sites: A study of brand-post popularity for brands in Singapore. *Proceedings of the International Multi Conference of Engineers and Computer Scientists*; 2015. p. 1.
- Sinclair JK, Vogus CE. Adoption of Social Networking Sites: An exploratory adaptive structuration perspective for global organizations. *Information Technology and Management*. 2011; 12(4):293–314.
- Huang JH, Chen YF. Herding in online product choice. *Psychology and Marketing*. 2006; 23(5):413–28.
- Ramesh N, Andrews J. Personalized search engine using social networking activity. *Indian Journal of Science and Technology*. 2015 Feb; 8(4):1–6.
- Number of social network users in India from 2012 to 2018 (in millions). 2015. Available from: <http://www.statista.com/statistics/278407/number-of-social-network-users-in-india/>
- Dhamodaran S, Sachin KR, Kumar R. Big data implementation of natural disaster monitoring and alerting system in real time social network using Hadoop technology. *Indian Journal of Science and Technology*. 2015 Sep; 8(22):1–4.
- UnSeok A. A study on the effects of Facebook brand fan page value proposition on brand engagement. *Indian Journal of Science and Technology*. 2016 Jul; 9(26):1–7.
- Chua AY, Banerjee S. How businesses draw attention on Facebook through incentives, vividness and interactivity. *IAENG International Journal of Computer Science*. 2015; 42(3):275–81.
- De Vries L, Gensler S, Leeflang PS. Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing. *Journal of Interactive Marketing*. 2012; 26(2):83–91.
- 9 brands with brilliant Facebook marketing. 2016. Available from: <http://blog.hubspot.com/marketing/facebook-marketing-examples#sm.00002c96ts30hdhcq2r1wetkhirs7>
- Sabate F, Berbegal-Mirabent J, Canabate A, Leberherz PR. Factors influencing popularity of branded content in Facebook fan pages. *European Management Journal*. 2014; 32(6):1001–11.
- Cvijikj IP, Michahelles F. Online engagement factors on Facebook brand pages. *Social Network Analysis and Mining*. 2013; 3(4):843–61.
- The Social Habit 2011. 2016. Available from: http://www.edisonresearch.com/the_social_habit_2011
- Electronics and Information Technology. Annual report 2015–16. 2016. Available from: <http://deity.gov.in/content/annual-plans-reports>
- Bernoff J, Li C. Harnessing the power of the oh-so-social web. *MIT Sloan Management Review*. 2008; 49(3):36.
- Li W, Darban A. The impact of online social networks on consumers' purchasing decision: The study of food retailers. 2012.
- Evans M, Jamal A, Foxall G. *Consumer behavior*. 2nd ed. John Wiley and Sons Ltd; 2009.
- Steuer J. Defining virtual reality: Dimensions determining telepresence. *Journal of Communication*. 1992; 42(4):73–93.
- Daft RL, Lengel RH. Organizational information requirements, media richness and structural design. *Management Science*. 1986; 32(5):554–71.
- Coyle JR, Thorson E. The effects of progressive levels of interactivity and vividness in web marketing sites. *Journal of Advertising*. 2001; 30(3):65–77.
- Kumar S, Jacob VS, Sriskandarajah C. Scheduling advertisements on a web page to maximize revenue. *European Journal of Operational Research*. 2006; 173(3):1067–89.
- Golder SA, Wilkinson DM, Huberman BA. Rhythms of social interaction: Messaging within a massive online network. *Communities and Technologies*; London: Springer; 2007. p. 41–66.
- Rutz OJ, Bucklin RE. From generic to branded: A model of spillover in paid search advertising. *Journal of Marketing Research*. 2011; 48(1):87–102.
- Zhang L, Peng TQ, Zhang YP, Wang XH, Zhu JJ. Content or context: Which matters more in information processing on microblogging sites. *Computers in Human Behavior*. 2014; 31:242–9.
- Baltas G. Determinants of internet advertising effectiveness: An empirical study. *International Journal of Market Research*. 2003; 45(4):505–15.
- Fan Page Karma. 2015. Available from: <http://www.fanpagekarma.com/facebook>
- Greene WH. *Econometric analysis*. Upper Saddle River, NJ: Prentice Hall; 2003.