SNS METRICS ANALYSIS
"A STUDY ON FANPAGE INTERACTIVE CONTENTS"

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Abstract: Social Networking sites are now considered to be an excellent media tool to connect directly with consumers. One of the most noteworthymethods to attach with the consumers through these Social Networking Sites (SNS) is to create a fanpage with brand contents and to postdiversecontents on these fanpages. According to different posts or contents placed on the fanpages, consumer responses in different manners. Usually users become fans of particular brand fanpages or put like, comments or keep sharing on particular posts of fanpages. These types of consumer activities in fanpages reflect brands' fanpage popularity and brands' WOM (Word of Mouth) communication.By measuring social networking sites' effectiveness, corporate houses are now analyzing metrics in terms of calculating engagement rate, number of comments/share and likings in fanpages .So now, it is very important for the marketers to know the effectiveness of different contents or posts of fanpages in order to increase the fan responsiveness and engagement rate in the fan pages. In the study the authors have analyzed total 1834 brand posts from 13 international brands of Electronics companies. Data of 9 months (From December 2014-August 2015) have been collected for analyses, which are available online from Brand' fan pages. Study explored the interactive posts from the fanpages and the impact of those contents (Interactive) on the user actions or PTA (People Talking About) metrics. Cross section Data Regression analysis was conducted by EVIEWS 9 software to analyze the non-parametric data.

Key words: Social media, Social networking sites, social media content analysis, social media metrics analysis, Interactive contents, PTA metrics.

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INTRODUCTION

In order to implement proper instrument in social Networking marketing strategy, it is vital to know and understand the user's reaction towards different posts on brand pages. It is important for the marketers to understand what types of contents motivate users to be engaged in a particular brand page. It is evident that users of the facebookfanpages tend to display favorable brand related engagement and also contribute in brand promoting actions by WOM actions through SNS.

It is prominent that users or fans of the brand pages tend to exhibit various brand related engagements and buying actions. The purpose of this research is to examine the interactive contents that influence customer engagement on a Facebook brand page. In order to have a successful social media marketing campaign, it is important to understand the behavior of customers on the brand pages and what motivates them to engage on a Facebook Brand Page which eventually should lead to purchase of the brand's products or services. (BEJTAGIĆ-MAKIĆ, 2013) [2]. With each new fan, the company not only gains a new potential active user but can also reach the fan's private network due to Facebook's technical features. This implies that it is indispensable for companies to increase their fan base in order to achieve extensive awareness for its brands and products.

In this study the authors explored the descriptive statistics of 13 Electronic companies, that will help the companies to get a clear idea about the types of contents and their variations in generating different consumer actions or engagement (Like, comments or shares).

LITERATURE REVIEW

1. Fanpage and Its Requisite

By creating a fan page within Facebook, companies can profit from a range of technical features (Boyd, 2007)[2].Prior research highlights that these technical features allow for a viral distribution and an interactive exchange of information (Gallaugher, 2010)[5] .First, a company can initiate the interaction with users by publishing a company wallpost, i.e., writing on a fan page's message board (so-called "wall"). Thereby, companies can choose betthe authors en a range of media types (e.g., status, link, photo, or app wallpost) in order to spread information the most adequate way (Yu, 2011)[9] .Second, also the users of Facebook can interact with a company, for example by commenting on a company wallpost. These user comments are listed directly below the corresponding company wallpost in reverse chronological order. Moreover, some companies even allow users to create own user wallposts. In both cases, companies can monitor and even mediate the dialog with users, for instance by reacting with company wallposts or comments (Gallaugher, 2010)[5].Furthermore, users can endorse company wallposts by liking them (Joinson, 2008)[7]and thereby pushing them in real time into the news feeds

of their friends (Debatin, 2009)[3] .Besides this, users can actively and virally spread company wallposts among their friends via Facebook's implemented "share" button. Users can "like" a whole fan page (instead of liking a single company wallpost) and become explicitly a fan of this company. This "opt-in mechanism" for ongoing communication establishes a close contact to the company's fans (Harris, 2011)[6]. As every company wallpost is automatically pushed into the news feed of all fans, they can be easily kept up-to-date and a large audience can be reached. (Debatin, 2009)[3]. Taken together, the described technical features of fan pages within Facebook allow companies to distribute and exchange information virally and highly efficient within the social networking sites.

2. Fanpage Interactive post

Interactivity is characterized by two-way communication between companies and customers, as well as between customers themselves put differently; it characterizes many-to many communications (Goldfarb and Tucker 2011; Hoffman and Novak 1996). Brand post characteristics vary in the degree of interactivity. For example, a brand post with only text is not at all interactive, while a link to a website is more interactive (Fortin and Dholakia 2005) since brand fans can click on that link. Moreover, a question performs as more interactive brand post characteristic because it requests an answer from brand fans. Since the objective of brandposts is tomotivate brand fans to react (i.e., liking and/or commenting),this is very essential to post more interactive contents in the fanpages.

FANPAGE POST STATISTICS

In the study we investigated types of contents or posts of the global electronics companies. We filtered out the Fanpages according to their variation in contents. We selected the Fanpages those are active in posting regularly. So we selected samples of Fanpages according to two criteria: 1) variation of contents 2) post regularity. Frequency data of posts and fans actions was recorded day-wise. We started collecting data from 1st December 2014 and stopped collecting at 31st August, 2015 from 13 Global brands' Fanpages. So, we collected 9 months' data and explored total 1834 posts throughout the time duration. After collecting data of one month, we re- checked data of users actions (Comment, like, Shares) after completion of one month. We collected post contents information manually and explored different variations in posts in the sector of electronics companies. Finally we filtered out the Interactive contents and made analysis on those particular contents.

Types of Interactive contents in Electronics Brand pages:

Vote content: In Electronics Fanpages, some posts ask the users to give their vote on certain product feature or updates. This content accounted less than 5% of total post.

Urge to Act post: These are the posts that urge or ask the users to do some actions to get any benefit shortly (e.g. To participate any contest to win prize, to give suggestions to get discount, to take part in survey, to do any action to get bonus or discount or any promo code). Quiz also involved in this type of contents. Overall this content contributes around 10% of total posts.

Question / Gap Filling: Electronics companies sometimes ask some questions to users regarding technical issues, updated version or satisfaction level. Also some posts that ask the users to fill a gap in a statement. Of the total posts, this type holds the share of 5%.

Users review post: This post shows the user information; user activities, users' bonus point, users' winning result or any thank giving post to users. Of the total post, users review post is 2%.

CONCEPTUAL FRAMEWORK AND HYPOTHESIS

We filtered the Interactive posts of the fanpages and developed conceptual model in this stage. In our final analysis, we picked or selected the most frequently posted contents to determine their impact on PTA metrics (viral impact) or overall comments, likes and shares. In our study, the most frequently posted items are: **1**) Vote contents **2**) Urge to Act post (UAP)**3**) Questions /gapfilling post (QP)**4)** User Review post (URP). The conceptual model is shown in Figure 1.
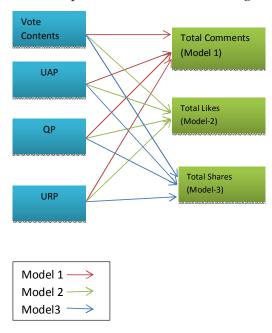

Figure 1: conceptual Model

Since the objective of brand posts is to motivate brand fans to react (i.e., liking and/or commenting, sharing), we expect that higher degrees of interactivity will generate more likes and comments (Lisette).Managers who specifically want to enhance the number of comments and shares, should post a highly interactive brand post characteristic at the brand post, such as a question (Lisset). According to previous study and Data review we can hypothesize:

For vote Contents:

H1: vote contents have a significant impact on generating Comments on Fanpages.

H5: vote contents have a significant impact on producing Likes on Fanpages

H9: vote contents have significant impact on producing shares on Fanpages.

For Urge to Act post (UAP):

H2: UAP have a significant impact on generating Comments on Fanpages.

H6: UAP have a significant impact on producing Likes on Fanpages

H10: UAP have significant impact on producing shares on Fanpages.

For Questions/ gapfilling :

H3: Questions/ gapfilling posts has a significant impact on generating Comments on Fanpages.

H7: Questions/ gapfilling posts has a significant impact on producing Likes on Fanpages

H11: Questions/ gapfilling posts has significant impact on producing shares on Fanpages.

For User Review post (URP):

H4: User Review post (URP)has a significant impact on generating Comments on Fanpages.

H8: User Review post (URP)has a significant impact on producing likes on Fanpages

H12: User Review post (URP)has significant impact on producing shares on Fanpages.

STUDY DESIGN

Sample selection and data:

For sampling, we followed non- probability sampling technique. We filtered out the Fanpages according to two requirements: 1. contents regularity of the Fanpages (On daily Basis) 2. Contents variations of the Fanpages (not only limited

to specific types of contents). We collected data according to date and rechecked that frequency after completion of one month. In the case of Facebook, it has been summarized that 70% of all user actions on wallposts happen within 4 hours and about 95% are received within 22 hours (Miller, 2011) [22].

Finally we selected 13 Global Electronics Brand' Fanpages and empirically investigated data of 13 international brands that were actively posting content at their brand Fanpages from December 2014 to August 2015. We gathered the number of likes, comments, shares on a brand post, through a total of 1834 brand posts.

The average number (M) of brand fans was 11,579,881 per brand; the number of posts taken into account in this research was, on average, 141.07(SD=182.66) per Fanpage; the average number of likes per brand post was 179147.9915 (SD=488648.8949), the average number of comments per brand post was 2968.222222 (SD=6954.363817), the average number of shares per post was 9402.495726 (SD= 31724.05468). The data shows quite a degree of variation across and within categories of PTA metrics (Comments, likes, shares)

METHODOLOGY

In the study, we collected data from each Fanpages according to date and clustered them into 9 months (December 2014- August 2015). And finally we selected Panel Data Multidimensional analysis to develop our regression model. We use panel data analysis here because the multiple observations on each unit can provide us superior estimates as compared to cross-sectional models of association (Greene, 2003)[16].

For panel data Multidimensional analysis, we checked following three models:

1. Pooled OLS Regression Model:

Here we pooled 118 observations together and run the OLS regression model, neglecting the cross section and the time series nature of data. The major Problem with this model is that it does not distinguish between the various Fanpages that we have. In other words, by combining 13 Fanpages by pooling, we denied the heterogeneity or individuality that may exist among the Fanpages. Finally, we rejected pooled OLS model, because independently pooled panel assumes that there are no unique attributes of individuals within the measurement set. But in our study, all Fanpages were not same as the variation of the users in Fanpages were high. The Fanpages average user rate was 11,579,881 with a high SD (Standard Deviation) value 12046736.14 (Min: 11,579,881 and Max: 42,248,945).

2. Fixed Effect or LSDV Model : The fixed effect model or LSDV model allows for heterogeneity or individuality among 13 Fanpages by allowing to have

its own intercept value (Cameron, 2005)[4].The term fixed effect is due to the fact that although the intercept may differ across the Fanpages, but intercept does not vary over time, that is it is time invariant

3. Random Effect Model: This model indicated that for the 13 Fanpages we have common mean value for the intercept as the REM allows for having a common mean value for the intercept (Cameron, 2005)[4].

DATA ANALYSIS

For data screening, model testing, model estimation and analysis we used Eviews 9. In our study, there are three models:

1) Model 1-: Total comment;

2) Model -2: Total Likes;

3) Model -3: Total share

Data testing:

1. *Normality Test:*

The Data Collected from the Fanpages was not normally distributed as the jarque Berra statistics for all variables were less than 5% .So we converted data into Log and turned into normally distributed data .

2. *Multicollinearity Test:*

We checked the Multicollinearity of the variables. No Variable is overlapping, and there is no problem of Multicollinearity

Model testing:

1. *Total comment (Model-1)*

Fixed and Random Effect Testing:

We estimated the fixed effect model and random effect model for the analysis of this model. After estimation, we tested the model through Hausman testing (Correlated random Effect- Hausman Test). In this test the Chi sqr probability value was less than 5%. So we select Fixed Effect Model . We tested the fixed effect model through Wald test. For the testing of Fixed effect model we have taken 12 dummy variables as we have 13 Fanpages. Fixed effect model can be estimated in many ways. One of the ways is using dummy variables (Greene, 2003)[16] and that is why we have taken dummy variables here. In the Wald test the probability value (P) of F-statistics is very tow (close to 1%) that is less than 5%.So, finally the decision to select the fixed effect model is appropriate.

2.   Total like (Model-2)

Fixed and Random Effect Testing:

We tested fixed and random effect through Hausman test and as the P value of Hausman test is less than 5%.And we select Fixed Effect Model and tested the fixed effect model through Wald test, which was significant to accept fixed effect model.

3.   Total share (model-3)

We tested fixed and random effect through Hausman test and the P value of Hausman test is more than 5% (p=.21). so we were unable to reject null hypothesis and accept the Random Effect Model.

Residual Testing:

1.   Total Comment (Model -1)

We selected fixed Effect model for the analysis of Model-1 and analysed the actual/fitted residual graph and table .We tested residual diagnostics. In this case residual was not auto-correlated as the Durbin Watson Value for the residual was 1.3 that is near to 2. Besides we checked residual normality and the JarqueBera P statistics was above 79% which indicated the normality of data.

2.   Total Like (Model-2)

We selected fixed Effect model for the analysis of Model-1 and analysed the actual/fitted residual graph and table.The residual for this model was not auto -correlated as the Durbin Watson value was 2.5 % indicating no serial correlation problem. For the normality testing Jarque-bera P value was 41%, confirming the normality of data.

3.   Total share (model-3)

We selected Random Effect Model to analyse this model and diagnosed the residual as well. The Durbin Watson Value is 1.7, confirming having no autocorrelation problem. The Jaque –bera Probability for normality was 20%, indicating normality of residual.

RESULT INTERPRETATION

The effects of the potential explanatory variable on the Fanpagesengagement (Like, Comment, shares) are evidently different.

1.   Total Comments:

The model for the Total comments is significant as a whole (F-value=3.945, p-valueb0.000029) and clarifies the variance of the dependent variable soundly

well (R2 =56.90%)So, we can interpret that the overall 57% comments in a Fanpage is because of Vote Contents, UAP, QP, URP. And remaining 43 % comments come from other posts.

The Vote content is significant and positively related to the number of Comments (Beta= 0.46, p-value 0.04) in support of Hypothesis 1 (H1). The UAP (Urge to Act Post) is significant and strongly related to the number of Comments (Beta= 0.58, p-value 0.01) in support of Hypothesis 2 (H2). The Question/gapfillingpost is also significantly related to the number of comments, so we accept Hypothesis 3 (H3). The User Review post (URP) is notsignificantly related to the number of comments, rejecting the Hypothesis 4 (H4).

2. Total Likes:

The model for the number of Likes is not significant as a whole (p-value=0.23) and explains the change of the dependent variable not reasonably well (R2 =17%,adj. R2 =14.0%). So, we can interpret that in the Electronics Brand pages 14% Likes are because of Vote Contents, UAP, QP, and URP. And remaining 86% likes derives from other posts.

The Vote Content characteristics are not significantly related to the number of Likes, contrary to hypothesis 5 (H5).The UAP (Urge to Act Post)characteristic is significantly and positively related to the number of likes (beta= 0.69, p-value=0.005), in support of hypothesis 6 (H6). The Question/Gap filling characteristics are not significantly related to the number of Likes, rejecting hypothesis 7 (H7).The User Review post (URP) is significantly related to the number of like with a positive effect (beta= .802, p-value=0.0003) confirming Hypothesis 8 (H8).

3. Total Shares:

The model for the number of Shares is significant as a whole (F-value=4.343, p-value=0.016) and describes the adjustment of the dependent variable reasonably well (R2 =47.0%,adj. R2 =34.0%). Form this analysis we can interpret that 47% of total shares of a Fanpage is because of Vote Contents, UAP, QP, URP. And 53% shares occur because of the other posts not included in the model.

The Vote Content is not significantly related to the number of Shares and we cannot confirm hypothesis 9 (H9).Besides, UAP (Urge to Act Post) posts is significantly related to the number of shares having a positive impact (beta= 0.63, p-value=0.01) confirming to accept the Hypothesis 10 (H10). The Question/Gap filling is not significantly related to the number of Shares and we cannot confirm hypothesis 11 (H11). The User Review post (URP) characteristics also positively and significantly related to the number of shares (B= 0.52, P-value=0.007) supporting to Hypothesis 12 (H12).

MANAGERIAL IMPLICATION

This research result will guide the Social networking Managers to have a clear guidelines in deciding which content to publish at brand posts. Our research shows that not all elements which are valuable for improving the number of comments do also have an effect on increasing the number of likes, shares and vice versa. The study showed evidently overall how much percentage of total engagement actions is created because of which Interactive posts. The result interpreted that the Interactive post has strong impact in creating Comments and Shares. The Urge to Act Post is most significant in creating Likes, Comments and Shares. To increase comments and shares, vote content is influential. The question/gap filling contents is related only to comments generation. The User Review Post is also persuasive in producing likes and shares.

Acknowledgement

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