Using statistical reasoning techniques for measuring users’ emotional connectedness to Facebook and their attitudes towards Facebook advertising

Ahmet Ertugan*

* Faculty of Economics and Administrative Sciences, Near East University, P.O.BOX:99138, Nicosia, North Cyprus, Mersin 10 Turkey

Abstract

In recent years, there has been a growing focus on investigating social networking sites particularly, Facebook through applying statistical reasoning techniques with making meaningful statistical inferences with the combination of information technology. For this purpose, the study examined the relationship between the emotional connectedness to Facebook and the users’ attitudes towards Facebook advertising by employing numerous statistical reasoning techniques. Gender differences were used to moderate the users’ emotional connectedness to Facebook as males and females. Pearson’s bivariate correlation and linear regression analyses were conducted on the data obtained from surveying undergraduate students of Near East University. Statistical analyses revealed that there exist significant, strong, positive association between the emotional connectedness to Facebook and the users’ attitudes towards Facebook advertising. In addition this association was found to be significantly stronger for female students than for male students.

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1. Introduction

The emergence of Facebook and similar social networking sites has initiated research on understanding consumers’ attitudes to Facebook advertising. A relatively large number of approaches have been applied to the study of reaction to advertisements in different media context. Applying statistical reasoning techniques to interpret...
from survey data is a common practice in the literature. This study attempts to investigate issues of concern from the lights of statistical reasoning techniques.

Some studies suggest that advertising is a force which moves people up a series of stages from being aware, like, prefer and decide to buy a product. Through at each stage of this model, consumers’ attitudes can be measured in evaluating the effectiveness of the marketing effort. An attitude toward advertising is described as one’s internal evaluation of an advertisement which is relatively stable, lasting predisposition to behaviour. The concept of attitude toward advertising is also considered as distinct from beliefs and brand attitudes but as one’s evaluation of the advertising stimulus. Attitudes towards advertising, brand cognitions, attitude toward the brand and intention to purchase the brand are considered indicators of advertising effectiveness. Similarly, attitudes towards advertising are considered to play a mediating role in advertising effectiveness by influencing brand attitude both directly and indirectly through its effect on brand cognitions, which in turn influences consumers’ intention to buy. However, researchers appear not to have yet reached a consensus on what attitudes to advertising comprises. Researchers have summarized the suggested antecedents and in three categories:

- Personal/individual factors that are inherent in the advertising process;
- Ad-related factors, such as use of humour or celebrity to enhance an individual’s view about the advertisement;
- Other factors such as time and product features.

Choosing different models of attitudes towards advertising allows researchers to operationalise their research of advertising effectiveness in “varying degrees of depth, breadth, and specificity”. This allows research on attitude toward Internet advertising to increase.

Social networking sites (SNS) are online social platforms that have become a part of the daily life of many people. A SNS allows users to create a public profile and interact with others on the same website where users can share text and images as individuals or in groups. Social networking sites such as Facebook, MySpace, Friendster, Live Journal, LinkedIn, Cyworld and Xiaonei are popular and successful SNSs. According to most leading survey reports Facebook is the leading SNS with over 1.1 billion users. Researchers are increasingly predisposed in examining Facebook users’ practices, motivations, and influences and studies have indicated a series of social and informational motives. They have also concentrated on Facebook’s benefits in forming relationships and interactions between users. Ellison posited that Facebook usage has the potential to impact individuals’ social capital by enabling interpersonal feedback and enhancing peer acceptance, by fulfilling the users’ informational needs, and by providing a series of applications to meet users’ needs for pure entertainment and recreation. Researchers also suggested enjoyment as the most influential factor in people’s continued use of Facebook, followed by number of peers who use the site and the site’s usefulness.

Some researchers incorporates emotional connectedness to the SNS and its integration into individual’s daily activities to measure Facebook usage beyond simple measures of frequency and duration. This they call the Facebook Intensity Scale (FBI) which comprises six attitude statements measured on a 5-Point Likert scale and two question statements. The Facebook Intensity Scale was developed as part of an investigation of undergraduates’ social networking site usage and social capital, the resources accumulated through being part of a network. Strong relationships were found between Facebook use and different types of social capital.

An important part of this study was the development of a scale to measure the active engagement of users with Facebook activities, the extent to which individuals were emotionally connected to Facebook, and how well Facebook was integrated into users’ daily lives. Social network sites (SNS) provide a new advertising media that has many advantages over the traditional media such as the ability to reach larger audiences, cost efficiency, effectiveness in target advertising. SNS offers a new way of communications to companies as not only the customers can interact with the company but they can interact with each other as well. This according to Mangold and Faulds produces a magnified form on word-of-mouth (WOM). describes WOM as the informal communications on products and services by two or more individuals where neither of them is a marketer. WOM plays a significant role on customer decision making as it is viewed as more reliable and impartial than advertising, a company financed, biased information. It’s only natural that companies will seek to take advantage of WOM through Facebook.
Traditionally, studies reveal that customers distrust advertising and are strongly inclined to avoid it on media platforms\textsuperscript{19}. WOM, however, overcomes this problem as a powerful tool on SNSs as an eWOM. It increases the speed of information dissemination and brand-related experiences, among customers\textsuperscript{20, 21}. Research has shown that “a social network user may believe that interactions among ‘friends’ are trustworthy but may independently appraise the site itself or advertising content displayed inside panels”\textsuperscript{22}. Taylor et al.\textsuperscript{23} and Wiertz and De Ruyter\textsuperscript{24} indicated that there is a relationship between one’s intrinsic motivation of participating in community activity and one’s intention of passing information to other members in the community. In other words, those who most contribute in quantity and quality are motivated by a sense of commitment to community and their online interaction propensity as well as the perceived informational value in the community. This indicates an association between SNS users’ engagement with Facebook and the possibility of them to share an advertising link. Therefore, it is reasonable to assume that people who are emotionally connected to a SNS, like Facebook, will also have an inclination to share advertising information with others.

Social media is relatively a recent phenomenon and consequently, literature on the association between social media and advertising is limited. Some studies have explored the concept of integrating social media into the marketing mix\textsuperscript{17, 25}. Other exploratory studies investigated representative cases in advertising\textsuperscript{16} or the quality responses of consumers\textsuperscript{26}. A model of users’ attitudes toward advertisements on SNSs was constructed by Taylor, Lewein and Strutton\textsuperscript{23} while they suggested a content-related, structural, and socialization factors as antecedents. Despite some studies carried out, further research is needed to understand how consumers’ personal differences in using SNS affect their attitude toward advertising on such network sites. This study aims to understand such association using Facebook as one SNS.

Past research suggests that the motivation of women and men in using the Internet is not the same and they have differences in attitude and behaviour\textsuperscript{19, 27, 28}. Therefore, while studying users’ degree of engagement and their attitude toward advertisements on SNSs gender differences should be considered.

Weiser\textsuperscript{27} puts forward that women are likely to use the Internet for communication and interaction while men use it more likely for entertainment, leisure and functional motives. It can thus be assumed that gender affects users’ connectedness to SNSs as well as their attitude toward advertising on a SNS. Taylor et al.\textsuperscript{23} suggests that gender has a moderating effect on users’ perceived social network usage and on attitude toward advertising on social networks. This further indicates that the motivation to seek entertainment or information from advertising on SNS has a stronger effect on women’s attitudes towards advertising than men. Based on this suggestion, users who use SNS for entertainment will have a negative attitude toward advertisements on SNSs and such negative relationship will be stronger for men than women. Finally, using SNS as part of daily activities has more likely to have a negative effect on attitudes towards advertising for men than women. These findings contradict previous studies which suggested that the positive association between informativeness and entertainment on attitudes to advertising is stronger for women while the peer influence on attitude toward advertisements was stronger for men. Such contradiction is described as unique to SNS use by researchers. They attempt to explain such contradiction from the evolvement of the user profile which depicts that the previous research is no longer appropriate.

The following research questions were put forward in the light of above:

- Are the two concepts of “emotional connectedness to Facebook” and “attitudes towards Facebook advertising” are associated with each other?
- Does the level of “emotional connectedness to Facebook” of users affect the level of their “attitudes towards Facebook advertising”?
- Does the level of “emotional connectedness to Facebook” of female users affect the level of their “attitudes towards Facebook advertising” more than males?

2. Methodology

The research design of this study is cross-sectional, descriptive, quantitative and correlational in manner. The independent variable of the study is ‘emotional connectedness to Facebook’ and the dependent variable is ‘attitudes towards Facebook advertising’ whereas, gender is identified as moderator variable. A survey which was adapted by the researcher was used to obtain data. The Section I of the survey consisted of one screening question to keep out those not having a Facebook account from the survey and one on the gender of the respondents. The survey
includes 3 sections: The Section I consisted of one screening question to keep out those not having a Facebook account from the survey and one on the gender of the respondents the section II comprised eight (8) attitude statements towards Facebook advertising was adapted from Zhang29. The Section III comprised of also of eight (8) attitude statements on Emotional Connectedness to Facebook which was adapted from Facebook intensity scale (FBI) developed by Ellison at al15. All attitude statements were measured on a 5-point Likert Scale.

A pilot test was first conducted where questionnaires were distributed to an initial sample of 20 students found at the faculty of Economics and Administrative Sciences, Near East University, Northern Cyprus. The questionnaires were prepared in English and Turkish as the faculty comprised of English and Turkish language speaking students. The pilot test was to make sure that the questionnaires were error-free, understandable, clear, consistent and easily completed by the respondents. Based on the feedback received from the pilot test, the questionnaires were improved and finalized.

A non-random convenience sampling technique was conducted to the undergraduate students from faculty of Economics. All respondents were requested to voluntary fill up the questionnaire based on their knowledge on advertisements on Facebook and their emotional connectedness to Facebook. University students were targeted for the survey as most literature defined young populations, especially the college-aged users as the largest demographic group using social media sites20, 30. A total of 212 questionnaire forms were distributed within the premises of the faculty of Economics and Administrative Sciences between April and May 2016.

Cronbach's (alpha) as coefficient of internal consistency was used to estimate the reliability of the questionnaires' responses. The Cronbach’s coefficient alpha of the 8 items for the attitudes towards Facebook questionnaire was 0.841, and for the 8 items measuring the emotional connectedness to Facebook was 0.762. Both suggest that the items had optimal reliability and relatively high internal consistency. This is the most popular test for consistency reliability and a coefficient above 0.60 is sufficient for most social science studies31.

SPSS version 21 was used to analyze data obtained by survey. This was followed by the descriptive analyses which were carried out on the demographics of the respondents indicating the profile sample by gender. The correlation analyses were carried out to demonstrate the influence and direction of the relationship between the variables which results were used for the hypothesis testing. The regression analyses were run in order to determine the relative importance of the independent variable on attitudes towards Facebook advertising.

3. Findings

For section I findings; out of 212 valid respondents, a total of 85 were male which represented 40.1% while 127 were female which represented 59.9%.

Section II of the questionnaire contained 8 attitude statements that were diligently formulated and distributed to 212 students of the Faculty, out of which 210 were regarded as valid. The section comprised attitude statements towards Facebook advertising was adapted from Zhang29. The average response to the statement attitudes on Attitudes to Facebook Advertising was 3.1952, which indicated that on average respondents showed only a slightly positive attitude towards Facebook advertising. Respondents mostly said that they did not fully ignored advertising on Facebook (3.6143 – reverse logic). Respondents also slightly agreed that advertisements are necessary to fund Facebook (3.6619). Finally, respondents slightly agreed that advertisements did not make them less likely to use Facebook (3.5000).

Section III of the questionnaire contained 6 attitude statements that were diligently formulated and distributed to 212 students of the Faculty, out of which 210 were regarded as valid. The section comprised attitude statements towards Facebook advertising was adapted from Facebook intensity scale (FBI) developed by Ellison at al (2007). The average response to the statement attitudes on emotional connectedness to Facebook was 3.5494, which indicated that respondents slightly agreed on their emotional connectedness towards Facebook. However, respondents disagreed on telling other people that they are proud to be on Facebook.

The 2-tailed Pearson Bivariate Correlation analysis on the total sample yielded a correlation of 0.288, which indicates a somehow weak correlation between the respondents’ emotional connectedness to Facebook and their attitudes towards Facebook Advertising. For the relationship between emotional connectedness and attitudes towards FB advertising there is significant positive weak correlation between two variables, r = 0.288, n = 210, p = 0.000.
Separate Pearson Bivariate Correlation analyses were carried out to inspect the nature of this relationship with respect to gender. The results indicate that there is significant positive moderate correlation between female respondents emotional connectedness to Facebook and their attitudes to Facebook advertising, $r = 0.578$, $n = 84$, $p = 0.000$ whereas there is not significant positive very weak correlation between male respondents between these variables, $r = 0.092$, $n = 126$, $p = 0.304$. Therefore, emotional connectedness of female respondents’ to Facebook was found to be more strongly associated towards attitudes on Facebook advertising than male respondents’.

A simple linear regression analysis was carried out to determine if emotional connectedness to Facebook significantly predicted attitudes towards Facebook advertising. The same degree of prediction was also tested by moderating the independent variable with gender; male and female.

The results of the regression for the total sample indicated that ($F(1,208)=18.850$, $p<0.000$) with $R^2$ of 0.083 which explained 8.3% of the total variance in attitude. Participants’ predicted attitude towards Facebook advertising is equal to $1.804 + 0.359 \ast$ (emotional connectedness to Facebook).

The results of the regression for females indicated that ($F(1,82)=41.108$, $p<0.000$) with $R^2$ of 0.334 which explained 33.4% of the total variance in attitude. Female participants’ predicted attitude towards Facebook advertising is equal to $1.390 + 0.556 \ast$ (emotional connectedness to Facebook).

The results of the regression for males indicated not significant finding that is ($F(1,124)=1.067$, $p=0.304$) with $R^2$ of 0.009 which explained almost none of the total variance in attitude. Male participants’ predicted attitude towards Facebook advertising is equal to $2.442 + 0.126 \ast$ (emotional connectedness to Facebook).

4. Conclusion

The data analysis reports of this study revealed that there is positive weak to moderate association between the respondents’ emotional connectedness to Facebook and their attitudes towards Facebook Advertising. On average respondents are emotionally connected to Facebook. They strongly agree that Facebook is a part of their daily activities. However, they disagree to tell others that they are proud to use Facebook. Their average emotional connectedness of the respondents to Facebook predicts their attitudes towards Facebook advertising. The levels of emotional connectedness to Facebook of users affect the level of their attitudes towards Facebook advertising. The results of this study indicated that the level of emotional connectedness to Facebook of female users affect the level of their attitudes towards Facebook advertising more than males.

This study has provided an empirical investigation to understand how university students’ personal differences in using SNS affect their attitude toward advertising on such network sites from the perspective of inferential statistical reasoning techniques.

Facebook, a most popular online social network site, was selected as the Social Network Site example. The findings suggested that there is association between the emotional connectedness to Facebook and the users’ attitudes towards Facebook advertising. Such association was found to be more influential in females than male undergraduate students. According to this study, therefore, female Facebook users are more attracted by the advertising on Facebook than males and are also willing to share such advertising.

A question arises whether the main targeted users of Facebook advertising should comprise mainly of females. Whatever is the answer, marketers need to further understand the behavior of both sexes to reshape online communication strategies. Living Online has become the new life style for many in the new Millennium. Clearly it is time to consider including online communications strategies within the marketing mix plans.

References


