Attitudes toward Facebook advertising

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ABSTRACT

The purpose of this study was to provide insight on attitudes towards Facebook advertising. In order to figure out the attitudes towards Facebook advertising, a snowball survey was executed among Facebook users by spreading a link to the survey. This study was quantitative study but the results of the study were interpreted in qualitative way. This research was executed with the help of factor analysis and cluster analysis, after which Chi-square test was used. This research expected that the result of the survey would lead in to two different groups with negative and positive attitudes. Factor analysis was used to find relations between variables that the survey data generated. The factor analysis resulted in 12 factors that were put in a cluster analysis to find different kinds of groups. Surprisingly the cluster analysis enabled the finding of three groups with different interests and different attitudes towards Facebook advertising. These clusters were analyzed and compared. One group was clearly negative, tending to block and avoid advertisements. Second group was with more neutral attitude towards advertising, and more carefree internet using. They did not have blocking software in use and they like to participate in activities more often. The third group had positive attitude towards advertising. The result of this study can be used to help companies better plan their Facebook advertising according to groups. It also reminds about the complexity of people and their attitudes; not everything suits everybody.

Keywords: Facebook, Virtual community, Advertising, Attitudes, Viral marketing, Web advertising

INTRODUCTION

Individuals act in such manner that would maximize their benefits gained from social interactions (James T. Tedeschi, 2009). Facebook provides an easy to use platform that can be accessed from almost anywhere in the world, to satisfy social needs of people. It can also be used for companies to advertise their products and keeping in touch with their customers. Facebook is also ideal for keeping in touch with large amount of people; a task that was formerly being handled via bulky e-mail message chains.

Virtual community, social networking community, social networking service, online community, are words that are constantly brought up in general conversations, media and business world. Not just aggregates of people, social networks are for sharing social interactions, social ties as well as common space. A virtual community differs from any other community only by being in a "virtual space", it still provides the same sociability support, information and sense of belonging. (de Moor & Weigand, 2007)

Services such as already mentioned Facebook, LinkedIn, MySpace, Twitter and Google+, have reached a vast popularity, especially among young adults. Latest addition to all of this is Diaspora, a Facebook alternative run by its users ("Facebook alternative Diaspora goes live," 2011). More alternatives in their different forms pop up constantly. Sheenan (2010) points out, that if advertising becomes too intrusive, people will go elsewhere to connect with their friends. This has been one of the ideas behind Diaspora, as well as the idea of not keeping detailed record of their members; a feature that Facebook is being constantly criticized of.

Facebook alone has over 955 million active users and over 50% of active users log on to Facebook every day and an average user has approximately 130 friends on Facebook (Melason, 2012) ("Facebook Statistics," 2012). LinkedIn has over 135 million users but is more of a professional network than casual("Linkedin About Us," 2012). Social networking has become so popular, that according to Anderson Analytics, 71% of social network users could not live without it (Sheehan, 2010). As the user bases grow, so does the interest of marketers. Marketers are willing to invest large amounts of money to reach their target market. Facebook for example offers customized ways to market your product. These virtual communities enable marketers to customize their advertisements to fit certain group of individuals. This can be done according to their demographic features or by their interests, and all marketers have to do is to choose which factors they are going to target their advertisements towards. This of course is ideal for the marketers; reaching that office worker with certain income and interests, who falls into their target group is easier. Instead of spending money on trying to reach these people the traditional way, Facebook and other online communities offer the better option. New generation of "smart advertising" is making it possible to enable such data mining technologies that enable advertisers to customize everything in their ad to correspond to the user viewing it. These new ways to reach consumers helped Hewlett Packard to reach twenty times the ROI (Return On Investment) it would have reached with traditional advertising methods (Mathieson, 2010).

There are two different ways of advertising of behavioral targeting; Network targeting and On-site Targeting. In network targeting, the data is collected from various different sites and user preferences, where as on-site targeting is based on a specific-site. Facebook used to have on-site targeting, but is now days following its users' moves even outside Facebook. There are two sides to this; Facebook follows users through their cookies as well as their "likes". (Popkin, 2011)

LITERATURE REVIEW

Most of the previous studies considering similar cases have been based either to some certain countries (Virkkala, 2009) or have researched slightly different things; Virtual communities, responding to different kind of advertising, consumer attitude towards advertising etc. These researches surely are similar in some ways to this research. This part will include the most remarkable of those studies.

Previous studies

Porter (C., 2004) has studied the features of virtual communities in her journal "A Typology of Virtual Communities". She wanted to create a classification system for researchers from various types of disciplinary perspectives to be used in different types of research. As a result, Porter created five Ps of Virtual communities; Purpose, Place, Platform, Population and Profit Model. These five are further affected by such factors as whether relationship in the virtual community is based on establishment and/or relationship. She also found out that people use virtual communities for different purposes; transaction to buy, sell or learn more about products and services, to discuss shared interests, to develop social relations and to explore new identities. Another study (Kim, Lee, & Hiemstra, 2004) made in the same year was focused on demographic and behavioral characteristics and their effect on loyalty when making purchases within virtual community. What Kim et al (2004) found was interesting; education background affects on activity within virtual community. Members with low education level tended to participate in membership activities more than their corresponding parts with more education. They also found out that when the period of time being a member increased, so increased the need levels of integration, fulfillment and membership.

The effect of virtual community on decision making was investigated by de Valck, van Bruggen and Wierenga (2009). According to them consumers use virtual communities as social and information networks. They found out that the power of a virtual community, such as Facebook, as reference group is related to its heterogeneity of its member base. People from all social classes interact, even though they might never meet in real life. They believe that as virtual communities keep growing, so does their power as reference groups in consumer-decision making.

Recent study on virtual community was executed by Trent J. Spaulding (2010). In his study "Can virtual communities create value for business" he looked into which kinds of businesses could benefit from virtual community advertising. He found out that in order to succeed in virtual community advertising, companies must respect social contracts where again social contracts enable companies to participate in virtual communities. "Participating according to the community's social contract allows the business to develop trust with the community" he concludes.

The significance of Facebook was the main idea for Sproull et al. (2007) article "Introduction to the Special Issue: Online Communities" and Wand & Lai (2006) have dealt with forms of participation within virtual communities in their research "Knowledge Contribution in the Online Virtual Community: Capability and Motivation". They found out that individual motivations do not influence knowledge contribution within a virtual community.

The motives for joining a virtual community have also been under examination. Lot of research has been made of how consumers receive marketing communication. Pervious researches have concentrated on for example, how consumers receive the advertising message in different context and how consumers react to different kinds of advertising types.

For example Torres & Briggs (2007) studied ethnicity and product involvement in their article "Identification Effects on Advertising Response". Their study was narrowed down to Hispanic-targeted advertising in low-and high involvement products.

Response to different kinds of advertising types was researched by Park et al. (2008) in their article "Cognitive, Affective and Conative Responses to Visual Simulation: The Effects of Rotation in Online Product" Their study tried to find out reasons why rotation, certain kind of a way to create 3-Dimensional advertising, affects the cognitive, affective, and conative responses of consumers. They looked into how consumers receive visual simulation when rotation is involved.

Consumer attitude towards internet advertising has also been looked into. For example, Kenneth C.C Yang (2006) wrote an article on how humanlike navigation interface affects attitudes towards internet advertising. He found out the result to be positive: When humanlike interface was introduced, it increased users' immersive feeling when navigating. When again clicking advertisings on web pages was investigated in "Internet advertising: Is anybody watching?" (Drèze & Hussherr, 2003). They used an eye-tracking device to see how online surfers pay attention on advertising. They found out that surfers do not click the banners, but still notice them. This, according to them, indicates that companies should rely more on the traditional brand equity measures, to create repetition to awaken unaided advertising recall, brand awareness and brand recognition.

However, not much research has been done on how virtual community members' attitude is towards advertising in their community. Zafar and Khan (Shandana Zafar, 2011) where examining the attitude towards social network advertising among young Pakistani consumers. They found out that young Pakistani consumers have overall positive attitude towards virtual community advertising. They concluded that "The social networks can be therefore considered to be an effective advertising medium for targeting young consumers".

Another one was made in Finland by Virkkala (2009). She was studying the consumer attitude towards Facebook advertising in Finland. She found out that consumers are reluctant to receive advertising within their communities in Finland. Advertisements where experienced more disturbing than useful among Finnish Facebook users. She also found out that some people even avoid advertisements in as many ways as they can.

METHODOLOGY AND LITERATURE

Survey Pilot

Pilot testing is a pretest done before the actual survey, where a smaller sample size is used for testing the survey. It is used for purposes such as determining whether or not the target audience understands the survey instructions, if the survey would fulfill the purpose it is attended to and to find errors before the actual survey (Sincero, 2012).

In this case a 10 person test was done in the premises of the Bangkok University. Survey was printed out and volunteers were asked to fill out the survey and point out spelling mistakes, errors and parts that seemed unclear to them.

Pilot testing was a great success as none of the pilot participants found any crucial mistakes in the survey. No major changes were made to the survey after the pilot testing.

Literature

As indicated in figure 1 (Appendix), ELM provides two different ways of forming attitudes; careful consideration or shortcuts. Peripheral cues, or shortcuts are simple cues in the advertising that can trigger primitive affective states that will be associated with the

attitude towards the object. If there is a potential cue, it should have the ability to affect attitudes in the absence of any arguments. For example, a message could come from attractive source or unattractive source and a person would be more likely to go for the attractive source (Petty, 1986) (Mary J. Bitner, 1985) (Jagpal, 1999) (Birks, 2006) (Chang, 2006) (Virkkala, 2009).

Thus those advertisements that are personalized or recommended by a friend will be more attractive to users resulting in more positive attitudes towards advertising in Facebook. When again, in the case where user is following a company, or already is well aware of it the central route is in the picture, meaning that the user has used careful consideration with this brand or product. This would also lead to more positive attitude when the advertisement is being displayed.

AIDA model is based on the assumption that the attention of the consumer is gained, thus advertisement must be disruptive for AIDA to become true. The new model combines emotions as well, thus disruptive could also be something that comes out of an emotional picture or text. In this context the AIDA however would generate negative attitude towards the advertisement, ultimately leading to blocking or avoiding kind of action as marketers try to get the attention of the consumer. I presume Facebook users do not want disruptive advertisements, such with their own name on it nor do they want to see blinking or moving advertisements. AIDA is generating positive or negative attitudes. In the attitude forming part of AIDA, the final step of AIDA, "action" is being put to use. After the features have affected the attitude of the consumer, in this case the user of Facebook, the end result is taking action. After forming the attitude, the very final state is action; to avoid, block or ignore when negative and to click, follow or purchase if positive. The new interactive model of AIDA suggests that all the phases of AIDA affect each other and the last result is buying decision. This would more or less support the positive attitude at the end (Carl McDaniel, 2006; David W. Schumann, 2007) (Hauge, 2011) (Carl McDaniel, 2006) (Ensor, 2005) (Virkkala, 2009)

DAGMAR suggests that advertisement must be informative enough thus "receivable". Ability to receive marketing communication is crucial with all the features that is why it is being set in the background of the model. Advertisement must be informative enough for people to understand it and the person must have ability to receive marketing communication. None of the other features can work without the Facebook user being able to receive marketing communication. DAGMAR also suggests that the advertisement must make sense. If the advertisement doesn't make any sense or is understood wrongly, it creates negative attitude. In some cases the advertisements are displayed in foreign language, have a picture that doesn't make sense to the user or are confusing in some way, it would lead to negative attitude. As DAGMAR suggests, consumer must be aware of the product and must understand its features etc. in order to ever go for action, purchase. This said, reasonableness of the advertisement is crucial in order to generate any kind of attitude at all (C.L. Tyagi, 2004) (C.L. Tyagi, 2004; Drypen, 2012; Ensor, 2005; Mukesh Trehan, 2009; William H. Cunningham, 1987).

Previous studies will provide general background information on the topic. This part is not visible in the research model, but is crucial in the sense that a reader understands the major trends, functions and purposes of the virtual community research and Facebook itself.

All of this connects to the research questions in the following way. The major research question is about perceiving advertising in the virtual community, in this case Facebook. This is being answered through the sub-questions that will provide more detailed questions about the major research question. The major research question is hopefully answered with the help of the whole research model, so basically everything in it relates to the major research question. The sub-questions are related to the model as follows.

How consumers perceive marketing communication. This is related to reasonableness of an advertisement and ability to receive marketing communication. Which features of virtual community advertising have the most significant effect on the attitudes of virtual community members is related to disruptive advertisement part as well as the parts covered by ELM. Which features of virtual community advertising are found most appealing and which are found most annoying. This is being handled in the Disruptive advertisement as well as the whole model. A research model is formed as is indicated in figure 2 (Appendix). This research model is based on the information gathered in the previous parts. It assumes that the features of the advertisement will affect how consumer attitude develops.

Features that mold the attitude refer to advertising features within the virtual community, Facebook. These features will affect on the attitude towards advertising only if the consumer is able to receive marketing communication thus the ability to receive is the feature in the background. If consumer is able to receive marketing communication, he/she can form attitudes towards it that are divided to negative and positive attitudes, this I base on the fact that advertisements are in general seen to form two kinds of attitudes. The ELM model suggested that the consumers can form attitudes in two ways; short cuts and careful consideration. It also emphasizes the fact that the involvement level affects decision making. In the AIDA model, consumers become aware of the product or service before creating any interest towards the brand itself. If everything goes according to the plan; it will lead to a purchase. Depending on the case, the advertisement will first create the attitude either positive or negative and that will create two groups; those reject and those who accept.

The DAGMAR model is based on an assumption that the company advertising must be informative enough so that the consumers become fully aware of the product or service. Thus ability to receive is a big factor behind the whole research model. Considering the previous facts presented according to the earlier discussion, following hypotheses are formed:
H 1.1 Reasonableness of an advertisement has affect on how consumer forms attitude about the advertisement. If advertisement doesn't make any sense, is in foreign language or is in other way confusing, consumer will have hard time forming an attitude about it or in the worst case; the marketing message might be misunderstood.
H1.2 If an advertisement is disruptive, it has negative effect on attitudes towards advertising. I presume most people want to have control over what their Facebook feed includes.
H1.3 When an advertisement is personalized or recommended by a friend consumer is more likely to generate positive attitude towards it that would later on lead to action.
H1.4 An advertisement by a company that you follow or know is more likely to generate positive attitude towards it than the one consumer is not already familiar with.
H1.5 The ability to receive marketing communication will affect all of the features. If a person is not able to receive marketing communication, none of the features matter and an attitude cannot be formed.
H2.0 Negative or positive attitude is formed. In the case of negative attitude the consumer doesn't take any action at all or either ignores the whole advertisement, blocks it with the help of an adblocker or browser settings, avoids the advertisement or takes action to hide posts by this certain member, group or a company.

Whereas if positive attitude is formed, the consumer will more likely click the advertisement, share it with his friends, make a buying decision because of it or be just generally more interested in this particular company or brand. In the next phase of this research, suitable tools are used to figure out what kinds of attitudes these two groups include, how they are formed and what is behind all of this.

This study is chosen to be made in case study format. To study a social phenomena, diversity of approaches or strategies can be used says Swanborn (2010). He divides these roughly to two different groups; extensive approaches and intensive approaches. Extensive

approaches typically have surveys and are more "in width", whereas intensive approaches are more or less case studies and are done "in depth". He explains case study in his book "Case Study Research – What, why and how?" in the following way: "Case studies are already difficult enough to define as a research strategy, because typologies of research strategies are generally based on different sources of data." He points out that case studies are based on social phenomena and Babbie (2004) agrees. Babbie says that there is little consensus on what may be considered as a "case" and the term is used broadly.   Since this study is done within Facebook, I have chosen to mix these two in the following way; this study will be an intensive case study researching social phenomena (Facebook), studying one phenomenon in its own content. It will also have some features from extensive approach, allowing me to use survey to gain relevant data from within the community. Vaus (2002) says that survey research seeks to understand what may cause certain phenomenon. He points out that case study tends to focus on certain cases.

Quantitative data has the advantage over qualitative data that it measures numbers. Since this research requires numbers that are generated by the upcoming survey, quantitative approach is being chosen to be the main research method. Quantitative research method reaches bigger amount of answerers which results broader data that is easier to generalize. Members of a virtual community are under examination which means that the sampling is not discretionary. This allows the research to reach more trustworthy end result where conclusions are not pointed to a certain research group. However, some disadvantages are present as well; for the non-mathematicians, the field of can be somewhat confusing. Quantitative research does not leave any room for grey areas either. That is of course inappropriate for social science, since human nature never is as simple as "yes" or "no" (Shuttleworth, 2008).

Factor Analysis

Factor analysis is being used to find mutual dimensions, factors, from the group of variables created by the survey. Factor analysis is used not to explain the variables, but to find dependencies between variables. For example, factor analysis can be used to study which variables correlate with each other such as how virtual community members' positive attitude towards advertising correlates with the informativeness of the advertising (Birks, 2006) (Archive, 2004).

Cluster Analysis

Cluster analysis is being put to use after the factor analysis; Cluster analysis can exploit the factor points of factor analysis mentioned earlier and continue from where the factor analysis was left. The general principle for cluster analysis is that the groups formed by it will have low internal variance and high variance between groups. This way these groups will have significant difference and the groups that have been formed are called clusters. In cluster analysis, each observation belongs to only one cluster (Heikkilä, 2004) (Birks, 2006).

Chi-Squared Test

The most typical Chi-squared tests are Pearson's Chi-squared test and G-test. Pearson's Chi-squared test is usually being exploited when statistical significance is being investigated. It is being referred to in general, when speaking of Chi-Square tests. This test is being used to test hypothesis between different groups. The significance is more likely to be emphasized when the relation between variables is strong, sample is big and two combined

variables' numbers are vast. Chi-square test's probability being 0,05 or less, it is considered to be statistically significant. In this study Chi-square test is used to make sure that this study has validity and reliability (Virkkala, 2009).

Population and Sampling

In this survey, a quantitative research is executed with the help of internet survey. The use of internet survey is justified mainly because of the target group of this research is within the internet, and more precisely, in the Facebook. The invite for the survey is being sent via Facebook to all of the author's friends who from there will spread the survey. The invite will include a small explanation and will encourage people to send this survey further to their friends.

This survey is being done via surveyGizmo. SurveyGizmo which is an online survey site that is free for students. SurveyGizmo is one of the leading tools for marketers, consultants and business professionals worldwide. SurveyGizmo's survey software supports millions of responses daily("SurveyGizmo is...", 2012).

Snowball-sampling, also known as chain sampling, chain-referral sampling or referral sampling ("Snowball sampling," 2012), is suitable when members of the population have not all been previously identified and are hard to contact or locate. It is mostly used when traditional survey methods are not suitable, for example when studying social networks (Miller, 2012). Snowball-sampling has first group which answerers are pre-determined. The main feature required from the group members is to fulfill the sample group requirements. In this case, the group chosen does not have any kind of a scientific method used when chosen. 422 people from the author's friend list (all) will be sent the invite for this survey. They are asked to forward this survey. This way the snowball effect is reached, creating non-probability-sample (Birks, 2006). However, the post is not visible for all of the people mainly because of Facebook's preferences. Some of the authors Facebook friends might have wanted to block posts from this specific person. Also, Facebook does not show all posts on the entire friends wall, but it is being decided according to the popularity of the post, as well as user preferences.

Snowball sampling is one form of non-random sampling, also called non-probability sampling. Just like a snowball collects particles when moving forward, so does this survey. However, even though being a suitable sampling technique for this study, snowball sampling suffers from one particular flaw; it is non-random when the sample selection is being executed (Bajpai, 2010). Another problem associated with snowball sampling is that it may create bias because of there is a possibility that the sample might not represent proper cross section from the population ("Survey Sampling Methods," 2012).   When locating respondents is extremely hard and costly, snowball survey is suitable survey method ("Survey Sampling Methods," 2012). Snowball survey begins by selecting known members of the population to create a "seed". After this phase, waves are created, where respondents send the survey forward. Sometimes there is limited number of waves, sometimes not. Smaller populations require only a few waves whereas larger require more. The survey can be completed also when certain percentage of the people contacted have answered the survey (Miller, 2012).

With population size as big as 950 million, confidence interval is set to 5. Confidence interval is also called margin of error. It basically means for example that if 47% of the of the sample picks an answer, one can be sure that if the question was asked of the entire relevant population between 42% (47 − 5) and 52% (47 + 5) would have picked the answer. Confidence level of 95% is being used. Confidence level then again tells how sure one can be. Basically this means that with 95% confidence interval one can be 95% certain. It

represents the true population and their answers. These figures are being decided with the help of a sample size calculator provided by "The Survey System" ("Sample Size Calculator," 2012), which is the best survey software of 2013, chosen by TopTenReviews. A demonstration in figure 3 (Appendix).

Thus the sample size will be 384. The mathematics of probability points out that the population size becomes irrelevant in the case where the sample size is less than a few percent of the total population examined. For example, a 500 people sample would be just as relevant for a population of 15, 000, 000 as it is for a 100, 000. This is also the reason why The Survey System ignores the population size when it is large or unknown ("Sample Size Calculator," 2012).

Statement of Research Methods Used

In this study a quantitative research method was chosen to be used and the data gathered from it would be treated in qualitative ways as well. This was mainly because of the population of this research was a virtual community, Facebook, with massive amount of users. A snowball survey was chosen to be the primary data collection form as it was seen best suitable for this kind of a research. SurveyGizmo website was used to collect the data. Literature was used to back up the theories of the author. Several different online services were used, as well as libraries both in Finland and Thailand to seek information regarding, not only the topic, but also research methods of similar studies and theses.

Response Rate

Online surveys like this do not get similar response rates to traditional surveys. There are many possible causes or explanations to this matter. One of these explanations is that web or e-mail surveys do not have similar personalization, precontact letters follow-up postcards and incentives that the traditional surveys usually have. One reason is, that many consider web-surveys to be some sort of "junk mail" or "spam", harmful, bothering electronic junk (Michale D. Kaplowitz, 2004).

As this survey did not have any kind of an incentive, the low response rate can be also explained by that. Medium length surveys are considered to be 12 – 25 questions. Normally medium length surveys seem to gather about 15 – 30% response rates. However, when no incentive is introduced, response rates drop below 10%. These estimates are made with follow-ups, which this research does not have, thus expected response rate is even lower than 10%. Median for survey response rate is 26.45%. It is also likely that over half of the online survey responses are going to arrive on the very first day of the survey and seven out of eight responses arrive within the first week. Recommended run time for an online survey is 2 weeks. Survey length is also seen as an important factor to affect the response rate, longer surveys tend to get less responses ("Survey Response Rates," 2012).

This survey was quite long indeed, as the author wanted to make sure that his survey would really answer the questions asked. There were 5 questions per one hypothesis and some to build background information, the basic demographics questions in the beginning. This resulted in 20 different parts in the survey which each included 5 statements or questions, except questions 11, 12 and 18 that included only 4 statements, questions 1 and 17 that were yes/no –questions. Questions 2 to 9 were demographic questions.

RESULTS AND DISCUSSION

This research exploits quantitative and qualitative data. The survey will generate quantitative data, numbers, which is then analyzed by using words. This method allows more analytical take on the subject instead of using just numbers or only text (Mark Saunders, 2007).

The survey was published on the wall of the author, visible to 465 Facebook users, including those that might have blocked the user. Those who saw the link and the invite to this survey were encouraged to participate and share the survey. The survey began on the 20th of March and continued until 15th of April. For the last 5 days of the survey, it did not receive any answers, so cutting it off was well justified and supported the references about the internet surveys. Survey started with a question about whether or not a person has Facebook account. If the answer was no, survey would take this person to the end of the survey and not let them answer any of the questions. This was made in order to exclude people that do not have Facebook account from answering any of the questions. Those who answered no, were only showed the "thank you" slide. There were 6 people who answered no, rest of the 150 answerers were 96%. The survey procedure allowed the collection of 150 answers. 52.1% of answerers were male, 47.9% female, thus gender spread was quite even.

Among other demographic questions was a question about answerers' race. 61% of all answerers were Caucasian, Asian/Pacific Islander were 12.7% , 12 declined to answer which is 8.5% of all of the answers. One of the basic demographic questions was about the yearly income of Facebook users. Majority of the answerers earned less than 25,000 US Dollars per year. Second were those who earn 25,000 to 34,999 USD per year. Education background was among the demographic questions. More than half of the answerers had Bachelor's degree, second most answers went to Post-graduate degree, altogether 18.2%. Rest of the education background spread quite evenly. Vast majority of answerers were 25 – 34 year-olds. Second most clicked group of users were 35 – 54 years-old, altogether 18.9%. Average answerer was 27.6 years old. Further background information was required in the form of Facebook related questions such as "How long have you been registered to Facebook" as well as "how often you log in to Facebook". One more background question was asked before the answerer was allowed to answer to the questions about advertising in Facebook. That question was about time spent in the service when logged in. Answerers of this survey had most been registered to Facebook more than 4 years, 60,8% respectively. Second most of participants had been registered 2 – 4 years, accumulating to 32,2%. Surprisingly no one was a new comer to Facebook, since the option "less than a month" didn't collect any answers at all. Answerers seemed to be quite frequently visiting Facebook, or they were logged in continuously. 43% told that they are logged in continuously whereas 37,3% logged in more than once a day. Logging in more than once might be explained by usage of several computers; at work or at school and then separately at home. Only 10,6% logged in once a day when again users with more random logging in habits were spread quite evenly. The time spent in Facebook while logged in was spread more evenly then the previous answers as most spent 1 -2 hours in Facebook while logged in, 35,7% respectively. 31,5% spend less than an hour in Facebook while logged in whereas third most popular answer was 3 – 4 hours, collecting 23,1%. True Facebook fanatics that spent 5 – 6 hours were altogether 5,6% and hardcore users with more than 6 hours of total time spent per login was 4,2%. The count can be seen from the following bar chart.

Analysis

The analysis was first done with 14 factors which unfortunately resulted in too small KMO sampling adequacy of .512. The whole analysis had to be redone from the beginning in order to make sure that the KMO would be higher securing the validity and reliability of this study. The new analysis firstly considered Pearson's correlation to select some variables that might be fit the factor analysis, or indicated the KMO to be more than .60.

Secondly, the factor analysis was run at first time to show the fitted model by Chi square goodness of fit test at 13 factors. But the result of rotated factor loading indicated that the thirteenth factor might be a latent factor. After that the number of factors was adjusted to be 12, and the factor analysis was ran by varimax rotation for the second time, resulting in better fitted model. The variables were concluded that should be in each factor, including its linear regression model of Z-score. The Z-scores of 12 factors that were ran the second time were analyzed by the cluster analysis (3 clusters).

Finally, the crosstabulation was run to show the number and percentage of demography variables by its clusters.

Factor Analysis in use

In order to get SPSS to perform factor analysis, variable 19 which included yes/no – question and is categorical data had to be changed into a dummy variable and named as "dummy 19". Further on couple of variables which had to be removed from the final data that was to be put in the factor analysis. This included variables 80 and 78, as well as the demographics variables that were questions that were not in set with the Likert scale.

Next step was to perform the actual factor analysis. SPSS found 12 factors from the survey data which had high enough Eigenvalue as can be seen from the scree plot, figure 4 (Appendix). Eigenvalue of these 12 factors was found to be higher than 1,0.

According to the Pearson's correlation, seven variables were not included in the factor analysis. These variables included the ones which had the lowest relationship to run factor analysis. They are var 47, var 51, var 55, var 78, var 80, var83, and var 93.

As indicated in table 1, Sampling adequacy by Keiser-Mever-Olkin and Bartlett's Spherity, KMO Measure of Sampling Adequacy of .609 is more than .6 which indicates that based on correlation and partial correlation, data are likely to factor well. By Bartlett's test of Spericity, under the null hypothesis that the correlation matrix is an identity matrix or there is no relationship among variables, we can see that chi-square value $(\chi^2) = 1911.140$, p= .000**, or Bartlett's test of sphericity is significant. This means that correlation matrix is not an identity matrix or there is significant relationship among variables. For these two results one can proceed with factor analysis. As indicated in table 2 (Appendix), it can be seen that the curve begins to flatten between factors 13 and 14, also that factor 14 has an eigenvalue of less than 1, as the above total variance explained table, so only 13 factors have been retained and then 13th factor is dropped off as a latent factor.

The above total variance explained table shows all the factors extractable from the analysis along with their eigenvalues. All 13 factors account for 65.197% of the variance; the first factor accounts for 12.796%, the second 10.664% and so on until the thirteenth which is 2.066%. All the remaining factors are not significant.

As table 3(Appendix) indicates, one of the 13 factors might be latent factor. In factor 13 there is no variable that has factor loading more than .50 . Thus varimax is run for 12 factors for next step.

Table 4 (Appendix) shows the factor loading after the rotation of 12 factors.

It found out that var 48,49,50,65,70,73,76,79,86,87,89,102,103,104,106, dummy19 were not selected to the model of factor analysis.

> Factor 1: consists of 9 variables; var 58 - 64, 92, and 105
> Factor 2: consists of 4 variables; var 71-72, 74, and 107
> Factor 3: consists of 3 variables; var 84-85, and 91
> Factor 4: consists of 3 variables; var 66 - 68
> Factor 5: consists of 2 variables; var 53-54
> Factor 6: consists of 3 variables; var 99, 100, and 105
> Factor 7: consists of 1 variables; var 77
> Factor 8: consists of 1 variables; var 96 - 97
> Factor 9: consists of 1 variables; var 90
> Factor 10: consists of 1 variables; var 81
> Factor 11: consists of 1 variables; var 56
> Factor 12: consists of 1 variables; var 94

The linear regression model for the standardized of factor 1-12 are

$$F_1 = .821Z_{58} + .833Z_{59} + .725Z_{60} + .734Z_{61} + .577Z_{62} + .696Z_{63} + .659Z_{64} + .529Z_{92} + .592Z_{105}$$

$$F_2 = .566Z_{71} + .829Z_{72} + .733Z_{74} + .500Z_{107}$$

$$F_3 = .648Z_{84} + .694Z_{85} + .670Z_{91}$$

$$F_4 = .715Z_{66} + .592Z_{67} + .625Z_{68}$$

$$F_5 = .899Z_{53} + .843Z_{54}$$

$$F_6 = .611Z_{99} + .632Z_{100} - .535Z_{105}$$

$$F_7 = .923Z_{77}$$

$$F_8 = .975Z_{96} + .621Z_{97}$$

$$F_9 = .527Z_{90}$$

$$F_{10} = .897Z_{81}$$

$$F_{11} = .836Z_{56}$$

$$F_{12} = -.802Z_{94}$$

Chi-square test in use

Table 5 (Appendix) indicates Chi-square Goodness of Fit Test, under the null hypothesis that 13 factors indicate good fit, we can see that chi-square value (χ^2) = 459.836, df = 515, p= .961 is not significant. This shows that the reproduced matrix is not significantly different from the observed matrix, or it indicates good fit.

Cluster Analysis in use

Cluster 1 is very similar to factor 8, and very far from factor 9, 3, and 5. There are 36 cases in cluster 1. This cluster is named as "anti social ad avoiders" according to their behavior in the Facebook. They do not tend to be truly annoyed by advertising in Facebook, but this could be straight result of their usage of blocking software as they also state that they do not pay much attention to advertising in Facebook. They do not see all the advertising thus they do not get annoyed by it. They don't tend to participate in any kind of activities even though they would be familiar with the company. They are experienced Facebook users highly educated and they also understand Facebook advertising well. Most of them are from age group 35 – 54. Conclusions can be drawn from this and the group can be seen as the negative part of the research model.

This cluster doesn't find Facebook advertising to be so annoying as 38,9% disagrees that Facebook advertising would be annoying and 27,8% is neutral about it. Altogether 55,6% Disagrees that Facebook advertising would be more annoying than advertising on other websites, 13,9% strongly disagrees. They do not seem to enjoy participating in a virtual community where members can share advertisements. However, they find advertisements shared by their friends to be more interesting than traditional internet advertising. They do not like to participate in activities that are advertised on Facebook by companies that they know. In this cluster, 8,3% strongly disagrees and 44,4% disagrees on the statement "my privacy is violated by advertisements from companies that I like or follow", thus they do not seem to be that bothered by advertisements from companies that they like or follow. They seem to understand Facebook advertising and rarely click anything by accident. They do not seem to pay much attention to Facebook advertising and barely notice Facebook advertising at all. This cluster understands Facebook advertisements best of all the clusters. 63.9% of them is using some kind of an adblocking software. They also care about their personal information, as 88.9% considers it very important and 11.1% somewhat important to block application from giving personal data to third parties or other people. As much as 41.7% considers it to be very important and 52.8% somewhat important to block different kinds of group invites and advertisements through them as well. They do not share or participate in competitions either (high total). Altogether they seem to think that the amount of advertising is suitable for Facebook. This cluster is the most highly educated with most post graduate degrees and they consist of biggest percentage of 35 – 54 year-olds. They are also the most experienced user group with 63,9% users being registered to Facebook more than 4 years.

Cluster 2 is extremely far from factor 8, and more similar to factor 9, and 13. There are 20 cases in cluster 2. This group was named as "sloppy participants" according to their actions in Facebook. In general they do not enjoy Facebook advertising but they are keen to participate in many kinds of activities and they like to share. This group is most likely to receive Facebook advertising and they are not that concerned about their personal data. They do not use any kinds of blocking software and they are the least educated cluster of the three. They also do not spend that much time in Facebook as this group is the least active one. Their attitude towards Facebook advertising is not all negative, as they do participate in activities and do like to share, however it is not totally positive either thus this is a neutral group that was not anticipated in the research model of this study.

This cluster thinks that Facebook advertising is annoying. As much as 65% agrees that they feel good about following a company page on Facebook. They also like to participate in activities that are advertised by companies they know. Altogether 55% agrees and 5% strongly agrees to click on advertisements from companies that they are familiar with and they do not seem to be bothered by advertisements from companies they follow or like. Relatively big percentage, 80%, does not use any kind of an adblocking software. They have the most positive attitude towards group invites and advertisements through them of the three clusters. However, they do not seem to share almost everything that involves a price or a lucky draw. As much as 20% strongly disagree and 60% disagree that advertising in Facebook would be entertaining. In this cluster, 40% disagrees that advertising in Facebook would be misleading. This is the least educated group of these clusters. They spend least time in Facebook as 50% spends less than one hour in Facebook per day. They are the only cluster to have fresh Facebook members and do not care so much for their personal information. This group is most likely to receive advertising in Facebook.

Cluster 3 is extremely similar to factor 5, and 11, and far from factor 4. There are 12 cases in cluster 3. They do not seem to be bothered by advertisements by companies they know. They also like to participate in activities that are from familiar of followed companies and are willing to share if the know the company. They tend to encounter more disturbing

advertisements than other groups. This group spends most time in Facebook of all the clusters. Most of them are male and 25-34 year-olds. Thus this cluster is named as "humble servants". This cluster could be seen as the positive attitude group mentioned in the research model of this study.

Vast majority of this cluster experiences advertising in Facebook to be annoying, but still not more annoying than on other websites. However, they do not dislike Facebook advertising enough to stop using Facebook because of the advertising. Altogether 50% feels neutral about participating in a virtual community where members can share advertisements. As much as 41,7% agrees that advertisements shared by their friends are more interesting than traditional internet advertising. They do not find advertisements shared by their friends to be higher in quality than traditional internet advertising. They however, think that advertisements shared by their friends stand out better than traditional advertisements. They are also positive towards activities advertised by the companies they know already, as 58,3% agrees to participate in them. 75% of this cluster agrees that they click on advertisements from familiar companies, number significantly higher than in the other clusters. They do not think their privacy would be violated by the advertisements from companies they follow or know and they seem to love to see advertisements from companies they follow or know. This group is altogether the most active clicker of advertisements among the three clusters as they have tendency to accidentally click advertisements or banner ads as well. They do not seem to understand all the advertisements they encounter. Among this cluster, using adblocking software is quite evenly spread as majority of 58,3% is using adblocking and 41,7% is not. As much as 50% considers it somewhat important and another 50% very important to block applications from giving personal data to third parties or other people. They also consider it to be important to block all kinds of group invites and advertisements through them. They like to have the control to themselves and decide what kind of advertisements are being showed to them while they are logged in. 8,3% strongly agrees and 66,7% agrees that they are happy to share a competition invitation if they know the company. However, they do not seem to share just about everything. They feel that advertising in Facebook is unnecessary, and 41,7% feels that advertising in Facebook is not clear to them. They also feel that advertising is not suitable for Facebook. This cluster seems to encounter disturbing advertisements more often than the other 2 clusters. They are mainly composed of Bachelor degree holders (83,3%) and spend most time in Facebook of all the clusters. 60% of them are male and most are 25 -34 year-olds.

Similarities between clusters

As much as 50% of all the answers from all the clusters were in "I am against advertising in virtual community such as Facebook". However, 51,5% of all the clusters agree that the possibility to share promotions in Facebook is interesting. One point that seemed to unite the clusters as well was that 50% agreed that advertisements shared by their friends would stand out better than traditional advertisements. 52,9% of all answers were on "agree" feeling good about following company page on Facebook and similar percentage was in disagreeing on paying attention to advertising in Facebook. Surprisingly, 52,9% disagrees that they would be glad to read advertisements in Facebook. All the clusters were mostly logged in continuously as well.

DISCUSSION AND CONCLUSION

Instead of just creating two kinds of attitude in the end as was speculated in the research model of this study, the data revealed that there are three very complex groups of people that can be divided into three categories, the clusters. These categories were created with the help of factor and cluster analysis.

Despite previous studies on similar cases, the background information and supporting marketing models, this research found that the three groups which of one is clearly trying to avoid all kind of advertising in Facebook, one seems to be neutral about it and one is clearly positive, participating in activities and sharing.

It was speculated that the features molding the attitude refer to advertising features within the virtual community, Facebook. These features would affect on the attitude towards advertising only if the consumer is able to receive marketing communication thus the ability to receive is the feature was in the background. However, even though the advertising message was misinterpreted, these Facebook users were able to form attitude in the cluster 3. The attitude this cluster formed was surprisingly positive in general.

It was also speculated that after forming attitudes towards advertising in Facebook, Facebook users would eventually end up with two different groups: those who from positive and those who form negative attitude. However, this was not exactly correct, as was seen from the cluster analysis results: instead, there were three groups of people that had not only positive or negative attitudes but neutral as well.

The ELM model suggested that there are two different ways to form attitudes; the shortcuts and careful consideration. This seems to be true in the sense that for example cluster 1 seemed to be considering closely what they would click and why, whereas cluster 2 has less consideration behind clicking. This was further emphasized by the fact that cluster 1 basically tries to avoid advertisements by all means and more or less choose what is displayed to them whereas cluster 2 does not use advertisement blockers and is more or less clicking away without too much concerns. Cluster number 3 seems to be clicking on advertisements from familiar companies as well.

The ELM model also suggested that involvement level has effect on decision making which can be confirmed by this study; when involvement is high in cluster 2, and they like or follow a company, they are also more likely to follow the advertisement and also click advertisements from familiar companies. They also tend to think that sharing, where involvement is higher, is fine. With cluster 3 this is even further emphasized; they seem to enjoy advertisements and competitions from companies they know.

The AIDA model suggested that consumers become aware of the product or service before creating any interest towards the brand itself. This can be considered to be true, as in clusters 2 and 3 consumers would be willing to click on advertisements from companies they know or follow. However, AIDA model also suggested that after becoming aware of the product, it would lead eventually to action. This is not entirely correct as the analysis revealed that some of the banner clickings are not done on purpose. Thus, just by creating awareness doesn't necessarily and doesn't likely lead to any action. As was seen the end result was not only two simple groups with negative or positive attitude, but three clusters that each had complex structure still being different from each other having their own kind of attitudes towards advertising.

As the DAGMAR model suggested, advertisement must be informative enough so that consumers become fully aware of the product or service. The awareness would not be enough, but the consumer should have more information about the product. This can be seen to be true, as all of the groups make careful considerations about brands. They seem to create more positive attitudes towards the advertisements that are by companies they follow or

know, whereas neither of them really care for banner advertisements. Disruptive advertisements didn't seem to gather that much attention among any of the clusters, only cluster 3 seemed to encounter some disturbing advertising. These findings further support the DAGMAR model's suggestions.

H 1.1 Suspected that reasonableness of an advertisement has affect on how consumer forms attitude about the advertisement. It claimed that if advertisement doesn't make sense or is in foreign language, consumer would have hard time forming an attitude and the marketing message might be misunderstood. Surely the marketing message might be misunderstood, but it seems that the consumer can form attitudes even when they do not understand marketing messages. Those attitudes seem to be in general positive, as can be seen from the cluster 3.

H 1.2 Suggested that if an advertisement is disruptive, it would have negative effect on advertising. Cluster 3 encountered most disruptive advertisements but was still able to form positive general attitude. Thus two conclusions can be drawn: Facebook advertising is rarely disruptive, but when it is, it can still form positive attitudes as well. Also, from all the answerers, cluster 1 used blocking software, cluster 2 didn't and cluster 3 the answers were divided quite even. The vast usage of blocking software might explain why people do not encounter disruptive advertisements any much as blocking sofware have become more and more advanced.

H 1.3 Speculation was that when an advertisement is personalized or recommended by a friend, consumer would be more likely to generate positive attitude towards the advertisement that would further on lead to action. This is quite strongly true according to the data analysis; as many prefer advertisements by their friends, however as found in cluster 1, some are even willing to block friends that send them promotional pictures or advertisements. Also the quality of the advertisements by friends was found to be less than traditional advertisements in Facebook in all clusters.

H1.4 Speculated that a company that you follow or know is more likely to generate positive attitude towards it than the one consumer is not already familiar with. This seems to be exactly true in the case of cluster 3, advertisements by a company that you follow or know was seen to create positive attitude towards advertising. However, as can be seen from the cluster 1, even though advertisements from companies that are being followed are being accepted, it can still generate negative overall attitude towards Facebook advertising.

H1.5 Claimed that the ability to receive marketing communication will affect all of the features and none of the other features will matter and an attitude cannot be formed if a person is no able to receive marketing communication. This however was not so true, as for example cluster 3 was not able to fully understand advertisements in Facebook, but was still able to generate mainly positive attitude towards advertising.

H2.0 Speculated that negative or positive attitude is formed in the end of the model and that these attitudes would further on lead to some sort of an action. However, instead of just two groups of people with negative or positive attitude, three groups were found that all represented different kinds of attitudes. Cluster 1 was clearly negative about advertising whereas cluster 2 generated "yes-man" kind of general neutral attitude. Cluster 3 then again was in general, positive about advertisements.

To answer the research questions of this study, couple of conclusions can be drawn from the analysis; consumers perceive advertising in virtual community in three ways: Negative, neutral and positive. Marketing communication might be misinterpreted but it can still result in positive attitude. The features that have most significant effect on the attitudes of virtual community members, are not necessary disruptive advertisements such as moving, blinking and surprising advertisements, but in most cases following companies resulted in more positive results. Banner ads were in general, found disturbing. The most appealing advertisements were found to be those that require some kind of a commitment e.g. following

and liking. According to the analysis and the results, a corrected research model is being formed as can be seen from figure 5. As can be seen from this model compared to the original, the end result is three different kinds of attitudes towards Facebook advertising instead of just two.

Limitations and further recommendations

As this was a general Facebook case study with massive population, further studies should be made to smaller user groups of Facebook. These groups could be political, or sports related as this would be much easier to research when people share an opinion or interest towards one certain phenomena. Also, this study did not focus on certain platform, which could be interesting way of narrowing down further research: Tablets, touch screens and cell phones could result in different kinds of data as well. These kinds of touch enabled devices makes it possible to produce different kinds of advertisements than the traditional kinds. Facebook has lately increased its income from mobile advertising, thus this could be timely research as well.

This research was pointed to all users of Facebook, but further research could possibly be pointed towards certain age group or ethnic group as well. Other virtual communities could also be studied. This study was limited to Facebook. As virtual communities grow, they become interest of marketers. Some virtual communities such as LinkedIn, could hold more potential information for some researchers, as more people list themselves with real names, job history and other more detailed crucial information not necessary available in Facebook.

This study did lots of generalizations and did not break down different types of advertisements: There are several different kinds of advertisements even within banner advertisements and viral advertisements, the features of these advertisements and their effect on attitude could be further studied as well such as how different colors, pictures or certain information might affect attitudes.

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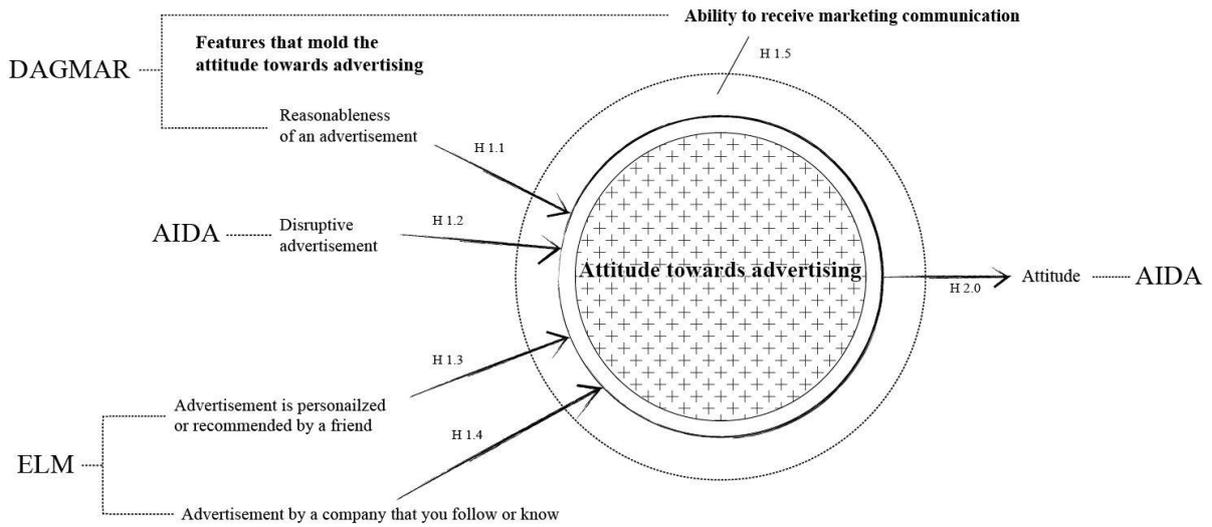
Figure 1
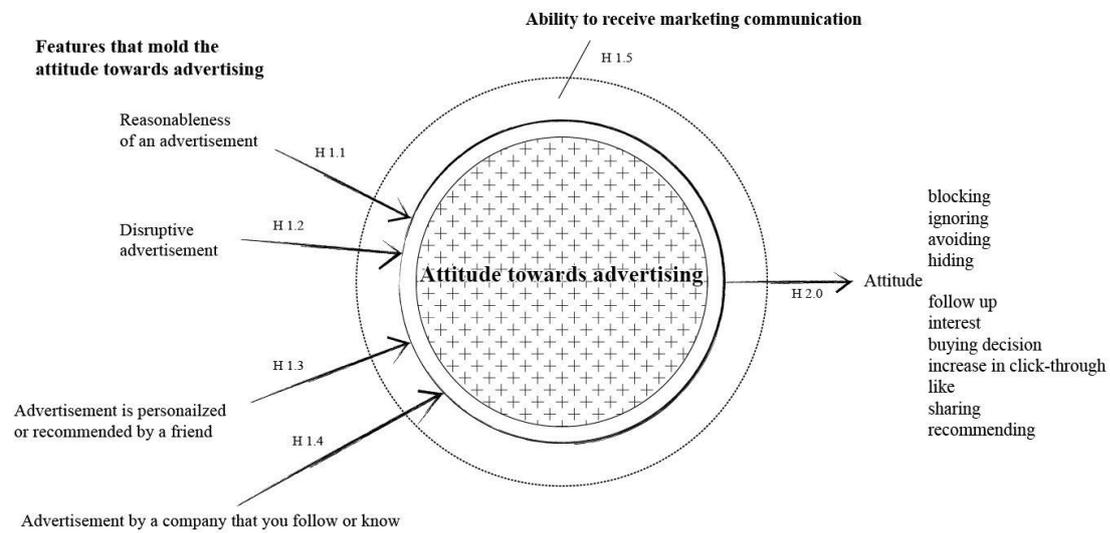
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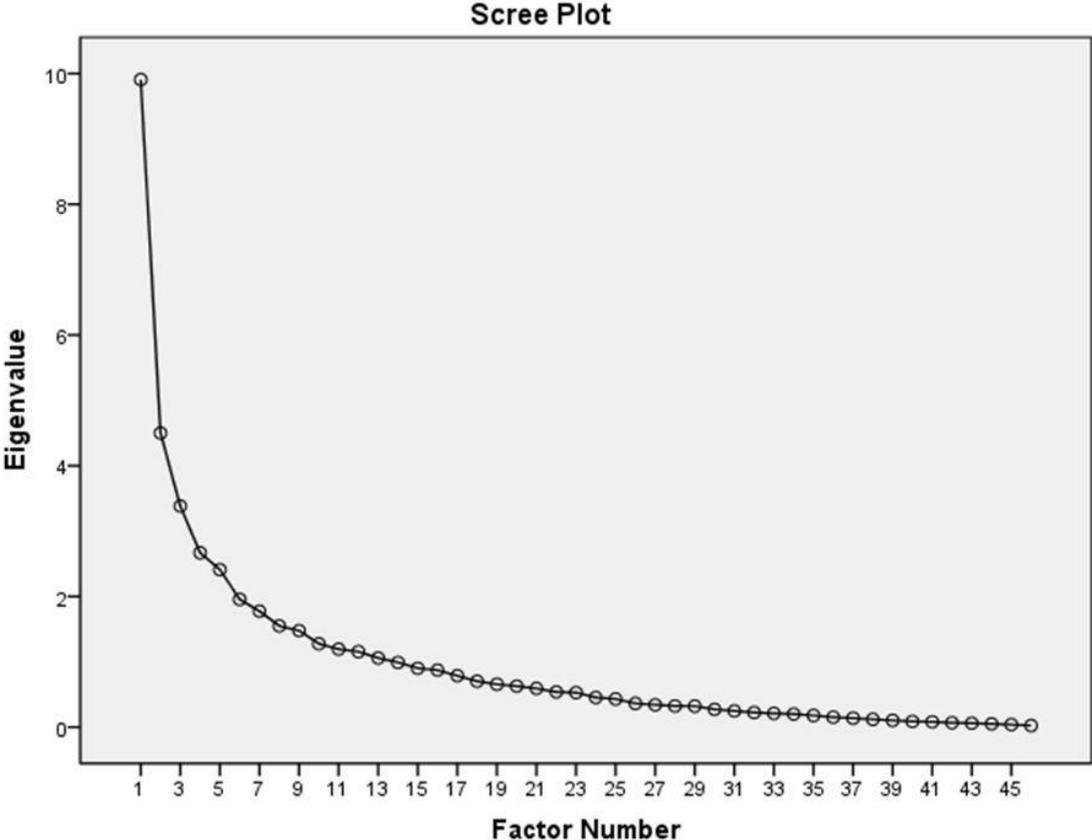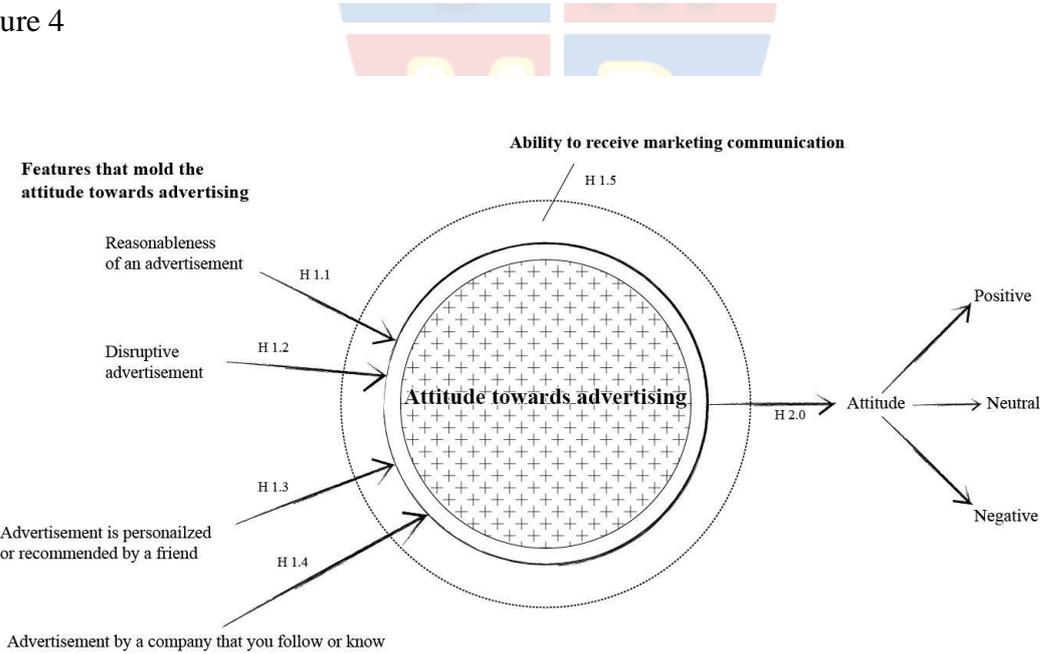
Figure 3

Figure 4

Figure 5

Table 1

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.609
Bartlett's Test of Sphericity	Approx. Chi-Square	1911.140
	df	1035
	Sig.	.000

Table 2

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.908	21.539	21.539	5.487	11.928	11.928	5.886	12.796	12.796
2	4.500	9.783	31.322	2.672	5.809	17.737	4.905	10.664	23.460
3	3.382	7.353	38.675	2.312	5.026	22.763	2.735	5.946	29.406
4	2.668	5.800	44.475	2.159	4.693	27.456	2.490	5.412	34.818
5	2.410	5.239	49.714	4.198	9.126	36.582	2.241	4.871	39.689
6	1.955	4.250	53.964	2.864	6.226	42.809	2.102	4.571	44.259
7	1.774	3.856	57.821	2.519	5.476	48.284	1.717	3.733	47.993
8	1.549	3.367	61.187	1.901	4.132	52.417	1.634	3.551	51.544
9	1.477	3.211	64.398	1.386	3.013	55.430	1.408	3.062	54.605
10	1.276	2.774	67.172	1.295	2.816	58.245	1.396	3.035	57.641
11	1.194	2.595	69.766	1.178	2.560	60.805	1.298	2.822	60.463
12	1.155	2.512	72.278	.897	1.950	62.755	1.227	2.668	63.130
13	1.058	2.300	74.578	1.123	2.442	65.197	.951	2.066	65.197
14	.990	2.153	76.731						
15	.901	1.959	78.690						
16	.873	1.897	80.587						
17	.787	1.712	82.299						
18	.703	1.527	83.826						
19	.657	1.427	85.253						
20	.628	1.366	86.620						

Table 3

Rotated Factor Matrix[a]

	Factor												
	1	2	3	4	5	6	7	8	9	10	11	12	13
48													
49													
50													
53					.862								
54					.885								
56												-.730	
58	.807												
59	.805												
60	.773												
61	.745												
62	.607												
63	.667												
64	.682												
65													
66								.926					
67													
68													
70		.602											
71		.663											
72		.819											
73													
74		.762											
76													
77					.885								
79													
81											.850		
84			.653										

85			.677									
86												
87												
89							.602					
90												
91			.672									
92	.547											
94									-.828			
96				.905								
97				.729								
99												
100				.529								
102												
103												
104												
105	.644											
106								.659				
107		.623										
D19												

Table 4

Rotated Factor Matrix[a]

	Factor											
	1	2	3	4	5	6	7	8	9	10	11	12
48												
49												
50												
53					.899							
54					.843							
56											.836	
58	.821											
59	.833											
60	.725											
61	.734											
62	.577											
63	.696											
64	.659											
65												
66				.715								
67				.592								
68				.625								
70												
71		.566										
72		.829										
73												
74		.733										
76												
77							.923					
79												
81										.897		
84			.648									
85			.694									
86												
87												
89												
90									.527			
91			.670									
92	.529											
94												-.802
96								.975				

97							.621					
99					.611							
100					.632							
102												
103												
104												
105	.592				-.535							
106												
107		.500										
D19												

Table 5

Goodness-of-fit Test

Chi-Square	df	Sig.
459.836	515	.961