Experimental Analysis of Facebook Marketing Using Conjoint Analysis and Eye Scanning

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Abstract – English

The main objective of the study is to understand how different attributes, presented in the online Facebook environment, affects the consumer's perception towards displayed item and the likelihood of purchase. To achieve the objectives, two studies were conducted. First study involved identifying the most important attributes influencing the online purchase using conjoint analysis. Second study involved taking the attributes obtained from the conjoint study and applying it into real life setting and analyse them using Tobii 1750 eye scanner device. Participants in both studies were students at Reykjavik University. Results from study 1 showed that price has the most motivational impact on the participant's likelihood of purchasing item online. Results from study 2 showed that if pricing is presented with a model in the picture, the model takes fixation time away from the price. Placement of the price is more efficient located in the picture in bold, black letters, with red box around it. Placement of the price under *likes* and *comments* is less efficient. The current research was conducted in collaboration with Manía, a fashion store in Reykjavík Iceland, and MMR Icelandic marketing and disseminate research company.

Abstract – Icelandic

Meginmarkmið rannsóknarinnar var að skoða hvernig mismunandi eiginleikar, sem settir eru fram með vöru á Facebook, hafi áhrif á skynjun og túlkun kaupenda gagnvart vörunni og auki líkur á kauphegðun neytenda. Til að öðlast skilning á þessu voru framkvæmdar tvær mismunandi rannsóknir. Fyrri rannsóknin var framkvæmd til að bera kennsl á hvaða eiginleikar það eru sem auka líkur á að varan sé keypt í gegnum netið. Seinni rannsóknin var byggð á niðurstöðum úr fyrri rannsókninni og sett í raunverulegt samhengi með augnskanna rannsókn þar sem notast var við Tobii 1750 augnskanna. Þátttakendur í báðum rannsóknum voru nemendur við Háskólann í Reykjavík. Niðurstöður fyrri rannsóknar voru þær að sá eiginleiki sem þótti mest líklegur til að hafa áhrif á kauphegðun neytenda var verð vörunnar. Niðurstöður seinni rannsóknar sýndu að ef fyrirsæta sýnir vöruna, þá tekur fyrirsætan athygli frá verði vörunnar. Staðsetning á verði skiptir einnig máli og sýndu niðurstöður að ef verð er sett inná myndinni með vörunni í feitletruðum svörtum stöfum með rauðan kassa utan um, þá fær verð meiri athygli heldur en þegar það er staðsett til hliðar undir *líkar og athugasemdir*. Rannsóknin var gerð í samstarfi með Maníu, tískuvöruverslun í Reykjavík og MMR íslensku markaðs og miðlarannsóknar fyrirtæki.

Foreword

Submitted in partial fulfillment of the requirements of the BSc Psychology degree, Reykjavík University, this thesis is presented in the style of an article for submission to a peer-reviewed journal.

All businesses operate within an ever changing environment and one of the biggest recent changes in marketing is the usage of Internet and social media. Companies have to be technology advanced to remain competitive in their business area. Social networking sites like Facebook are getting more popular by the minute and the online brand community has expended its boundary to that new network society (Lee, Kim, Kim, 2012). Social media marketing refers to the process of gaining attention and website traffic through social media sites like Facebook. It is relatively an inexpensive platform for companies to implement marketing campaigns and an easy way of connecting with consumers and establishing a relationship (Mohammed, Fisher, Jaworski and Cahill, 2002). Facebook is one of the biggest social media networks there is, with over 1 billion users using the site each month, and it is changing the way people are interacting and sharing information. In Iceland the use of Facebook is relatively high (75,5%) (Statistical Iceland, 2011), and companies are increasing their usage of this marketing platform.

The current research was conducted in collaboration with Manía, a fashion store in Reykjavík Iceland, and MMR Icelandic marketing and disseminate research company. Manía uses Facebook as their main online shopping site and customers order their product by phone or email, based on information given on Facebook. Pictures of Manía products are uploaded on their personal site regularly and news about their uploads appears in their followers' newsfeed section. Many other companies are doing the same thing as Manía, publishing and advertising their products on Facebook, without any further knowledge of the effectiveness of this marketing tool. It is easy and affordable, but findings and research on the effectiveness is lacking. This lack has been noted as a possible obstacle to Internet advertising (Dreze & Hussherr, 2003; Novak & Hoffman, 1997).

Consumer behavior analysis is chosen as the area for this study to investigate consumer behavior on Facebook. Facebook marketing should be of importance to behavior analysts because of the potential contribution of social media in understanding consumer behavior online, remains underdeveloped and lacking published researches. Studies on Facebook from the perspective of consumer behavioral analysis could therefore expand our understanding of how consumers respond to various marketing measures. Consumer behavior analysis habitually makes behavioral laws and principles to predict real life consumer behavior. Consequently, the consumer behavioral models should be making accurate predictions about consumer behavior, as well as prescribing the perfect solutions for affecting the consumer and his shopping habits (Alhadeff, 1982). By analyzing the importance of different attributions to the consumer in an online setting, retailers could reduce escape behavior and try to maximize the time the consumer spends viewing the product. According to Foxall, Oliveira-Castro, James, Yani-de-Soriano & Sigurdsson (2006) no special behavior is expected from the consumer in an online environment. The consumer has the opportunity to view many options at once and the freedom to start or stop the purchasing process whenever they want to.

Research indicates that a visually appealing website has a powerful impact on users' perception of the products displayed (Lavie &Tractinsky, 2004). Therefore the appearance of websites is an important factor for companies. Eye tracking usage has increased in laboratory settings and afforded new understanding of online behavior. Eye tracking device provides the researcher natural environment, where infrared light is bounced off the user's eyes and located by numbers of sensors in the monitor (Djamasbj, Siegel & Tullis, 2010). The device gives the researcher information about what the user is looking at while performing a certain task (Granka, Feusner &

Lorigo, 2008). In this research the Tobii 1750 eye scanner device, version 3, is used to study the behavioral process of respondents selectively noticing one aspect of the environment over others. Tobii measures several things, for example fixation length and time to first fixation. Fixation is generally defined as a spatially stable gaze where visual attention is focused on a specific area of the visual display for about 200-300 milliseconds (Granka, Feusner & Lorigo, 2008; Rayner, 1978). Former research indicates that there is a connection between the time spent on an item and perception and processing of the item (Just & Carpenter, 1980; Rayner, 1978). Different fixation length can be attributed to the time and the need required to process information (Granka, Feusner & Lorigo, 2008).

The main objective of the study is to understand how different attributes, presented in the online Facebook environment, affects the consumer's perception towards an item and the likelihood the consumer purchasing it. To achieve the objectives, two studies were conducted. First study involved identifying the most important attributes influencing the online purchase using conjoint analysis. Second study involved taking the attributes obtained from the conjoint study and applying it into real life setting and analyze it using eye tracking. The purpose of the latter study was to use an eye tracker device to answer questions regarding the perception of visual stimuli. With the creation of this framework, stores and other companies can benefit from the results in the way of better understanding the consumer and the attributes that increase the likelihood of consumer purchasing. The market is using this environment and it needs more information not only about how to use it, but also about why the market should use it and where to direct its focus.

Therefore the goal of this research is to look at different attributes and enhance knowledge about attention and the different amount of time spent on different

attributes. Price is expected to be the main influencer while making an online purchase and the amount of time spent on that attribute is considered to be valid to the companies and to increase the likelihood of purchase.

Study 1

To obtain a comprehensive understanding of how people value different attributes while making a purchasing decision, a conjoint analysis was conducted. Manía provided pictures from their Facebook page for use in this study. Conjoint analyses offer an approach for studying the importance of different attributes in experimental design. In this study the attributes focused on are the ones most used in Facebook marketing. A pilot study was conducted prior to the conjoint analysis to identify the major attributes in Facebook album from companies.

In online shopping, the environment consists of different attributes and one of those attributes is the price of the product (Fagerstrøm & Ginhea, 2011). Price is the most important attribute and has the most impact (both negative and positive) on the likelihood of online purchase (Reibstein, 2002; Fagerstrøm & Ginhea, 2011). The following assumption is made about the attribute price and based on former research on pricing and effects of pricing in online web shops: When price is low or an offer is given, the likelihood of leaving the web shop is reduced and more time is spent on the item. This response increases the likelihood of purchasing the item (Fagerstrøm, 2010; French, 2003). Therefore the focus of this study is the results of price and the effect it has on purchasing behavior on Facebook. In preparation of this study a pilot survey was made to provide details about the variety of attributes consumers prefer in Facebook purchase environment.

Method

Participants

The participants were undergraduate students from Reykjavik University who volunteered for the study. The participants were randomly divided into two groups, Group 1 and Group 2. They were 84 in total, 68 females and 16 males. The age range was from 20-42 years old, of which 78 participants were between the ages of 20 to 30.

Measures

Basic questions regarding personal information was assessed with questions considering both basic demographic information (e.g., name, contact, age, gender, education, occupation), as well as online behavior information (e.g., average internet use per week in hours, items bought online within the last six months, how likely they were to buy something online within the next six months, number of items bought through Facebook within the last six months, and how likely they were to buy something through Facebook in the next six months) (see appendix B). Participants answered those online information questions on a five-point Likert scale from 0 (very unlikely) to 4 (very likely).

Research design

Seven attributes were used in this study. Each attribute had a different amount of levels as seen in Table 1. The attributes used were price, shipping cost, available size, gallery pictures, donation to charity, guarantee and placing the order. The different level for each attribute is assumed to have a varying impact on purchasing behavior. The attribute placing the order was provided in three levels: By email, by online website, or by phone. The price attribute was also given three levels (from lowest price to the highest): 9,000 kr, 13,000 kr, or 17,000 kr. Shipping cost came also with three levels: free shipping, pick up from store, or 1,200 kr delivery charge.

Gallery pictures were also provided in three levels (least information to most information): front picture, front and back picture, or 360-degree view. Other attributes were given two levels. Available sizes are either mentioned or not mentioned. Donation to charity are given or not, and guarantee is either included or not.

Table 1. Attributes and levels considered in this study

Attributes	Levels
Placing the order	1. By e-mail
	2. By online website
	3. By phone
Price	1. 9,000 kr
	2. 13,000 kr
	3. 17,000 kr
Shipping cost	1. Free shipping
	2. Pick up from store
	3. 1,200 kr
Available sizes	1. Available sizes mentioned
	2. Available sizes not mentioned
Gallery pictures	1. Front picture
	2. Front and back picture
	3. 360 degree view
Donation to charity	1. Yes
	2. No
Guarantee	1. With guarantee
	2. Without guarantee

In implementing and designing the conjoint analysis a main effect model was used. The main effects model assumes that the participant gets a total value for combination of stimuli, by adding up the value for each stimulus (Hair, Black, Babin, Anderson & Tatham, 2006). The method used for data collection was the full profile

method (Green & Srinivasan, 1978). Participants are asked to evaluate a set of experimentally varied stimuli and that stimulus is defined as attributes used in the study. This method gives a perception of realism and reduces the chances of comparison through the use of fractional factorial design (Hair et al., 2006). This design results in 18 stimulus cards as illustrated in Table 2.

Table 2. Factorial design used to generate stimulus cards

			Attributes and levels for the 18 cards				
Stimulus cards	Price	Shipping cost	Available size	Gallery pictures	Donation to charity	Guarantee	Placing the order
1	1	1	2	1	2	1	1
2	1	1	2	2	1	2	3
3	1	2	2	1	1	2	1
4	2	3	2	2	2	2	3
5	1	3	1	1	2	2	1
6	3	2	2	1	2	1	3
7	2	2	1	2	2	2	1
8	2	1	2	1	1	2	2
9	1	3	2	2	2	1	2
10	2	1	2	3	2	1	1
11	3	1	1	2	1	1	1
12	1	2	1	3	1	1	2
13	3	3	2	3	1	2	1
14	1	1	1	3	2	2	3
15	1	1	1	1	1	1	1
16	3	1	1	1	2	2	2
17	3	1	2	3	2	2	3
18	3	2	2	3	1	1	1

Procedure

Bachelor's students at Reykjavik University were asked to participate in the research. Before that research took place a pilot study was made with four 27-year-old females, where they were kindly asked to make comments regarding the procedure and their understanding of it. The information gained was then used to complete the structure for the main study that was conducted with the bachelor's students. The main study took place at two different classes in the psychology department. In the beginning informed consent was obtained (see appendix A), followed by a questionnaire with demographic information and questions regarding Internet use, Facebook use, online shopping habits and then a rating of the importance of the seven attributes used in this study. The research was then explained to the participants in detail. Participants were told to assume that they were going to purchase a dress online through the Facebook page of Manía, a fashion store in Reykjavik Iceland. Pictures from the Facebook album were shown (see appendix E). The variation of attributes can be different and in this study there were seven different attributes and levels used in 18 different slides based on the conjoint analysis method. The participants were told that these attributes had different levels and each level was explained to them for better understanding. The dependent variable in this study was defined by participant likelihood of purchasing the dress from this Facebook page on a five-point Likert scale, from (1) very unlikely to (5) very likely (see appendix D). When participants had finished evaluating the 18 slides they were kindly asked to leave comments.

Data analysis

Conjoint analysis was used to measures the preferences for product attributes and levels. The analysis was performed using SPSS 20.0.

Results

Table 3 shows the impact estimate and relative importance of attributes. The first column shows attributes and levels. The second column represents the utility estimate, and the third column the importance ranking of the seven stimuli. The constant is the base impact, and the other attributes values contrast with that value (5.4.) in either positive or negative direction. Correlation is found between observed and estimated preferences (Pearson's r = .96, p = .00).

Table 3. Conjoint impact estimate and relative importance of attributes

	Conjoint estimate and relative importance		
Attributes and levels	Utility estimate	Important values	Importance ranking
Placing the order		15.21	3
By e-mail	.160		
By online website	.051		
By phone	-.212		
Price		21.90	1
9,000 kr	-.501		
13,000 kr	-1.001		
17,000 kr	-1.502		
Shipping cost		11.94	5
Free shipping	-.207		
Pick up from the store	-.414		
1,200 kr	-.621		
Available size		9.98	6
Available sizes mentioned	-.285		
Available sizes not mentioned	-.571		
Gallery pictures		13.28	4
Front picture	.278		
Front and back picture	.556		
360 degree view	.834		
Donation to charity		8.74	7
Yes	-.272		
No	-.545		
Guarantee		18.95	2
With guarantee	-.901		
Without guarantee	-1.801		
(Constant)	5.401		

Figure 1. Impact score for all seven attributes.

Figure 1 shows the average impact for all seven attributes: price, shipping cost, available size, gallery pictures, donation to charity, guarantee and placing the order. It shows the relative impact of the seven attributes when participants were asked to rate the likelihood of buying the dress. Price was the most important attribute with the average impact score of 21.9%. A guarantee, which provides the costumer the option to return the product, is the second important attribute with the score of 19%. Placing the order, gallery pictures and shipping cost were considered third, fourth and fifth, respectively, with average impact scores of 15.21%, 13.28% and 11.94% respectively. The two least important attributes were available sizes (9.98%) and donation to charity (8.74%).

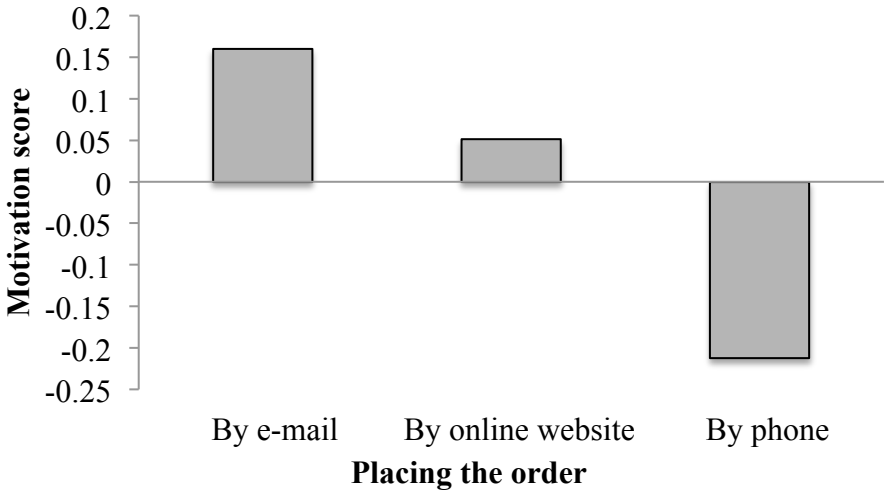

Figure 2. Motivation scores for placing the order.

Figure 2 shows the summary motivations scores for placing the order. The results show that ordering by email has a positive effect on the likelihood of buying with the motivation score of .160. Ordering by online website has a small positive effect, with the motivation score of .051. By phone had a negative effect on the likelihood of purchase, with a motivation score of -.212.

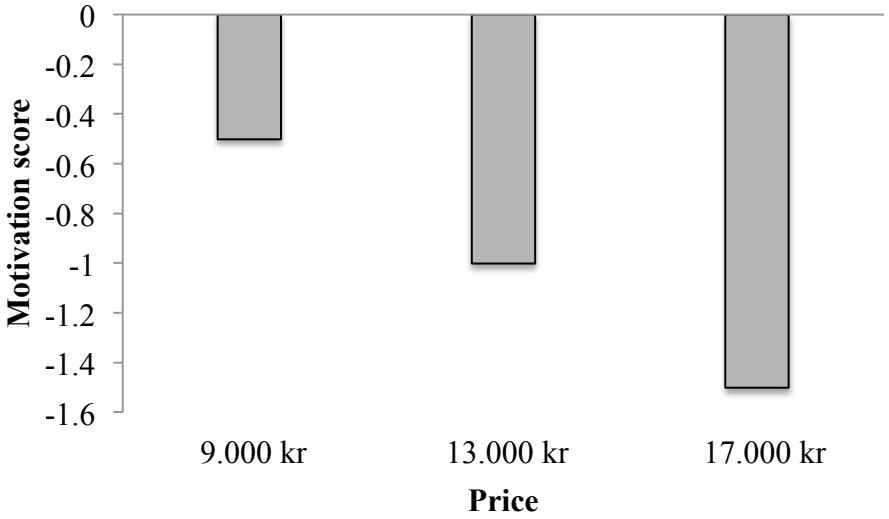

Figure 3. Motivation scores for price.

Figure 3 shows price and the summary of motivation scores for different levels of price. Even though the results are negative the stimulus level 9,000 kr can be assumed to have the highest likelihood on purchasing the dress online through

Facebook, with the motivation score of -.501. The level 13,000 kr has the motivation score of -.1.001 and the level 17,000 kr has the score of –1.502.

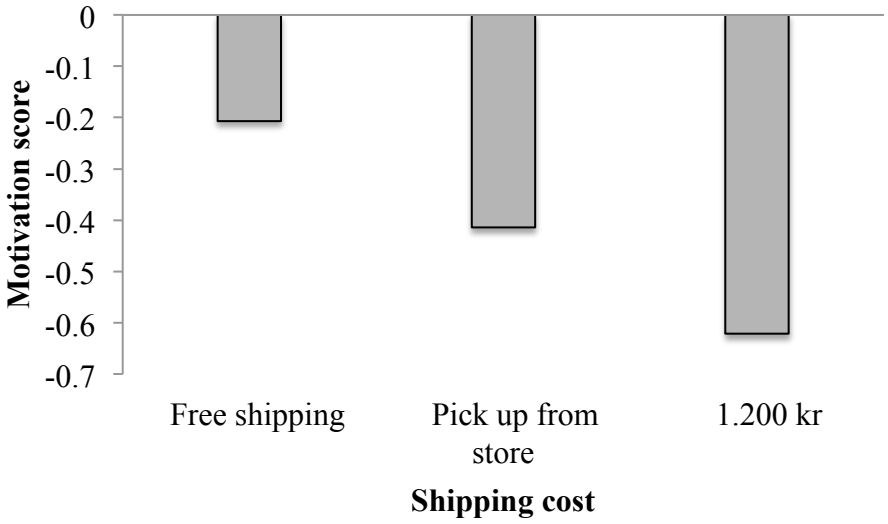

Figure 4. Motivation scores for shipping cost.

Motivation scores for shipping cost are shown in Figure 4. The stimulus level free shipping has the motivation score of -.207 and has a higher effect on the likelihood of purchasing the dress online then do the stimulus levels pick up from store (-.414) and 1,200 kr charging fee (-.621).

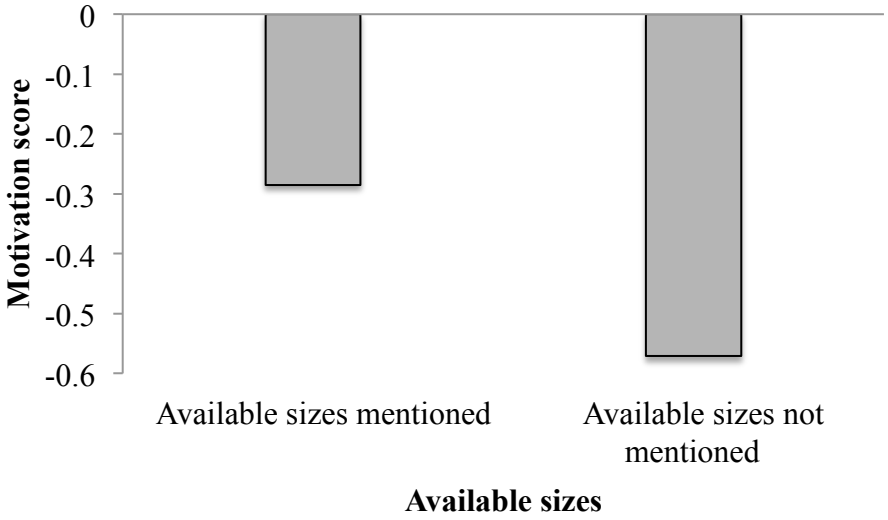

Figure 5. Motivation scores for available sizes.

Figure 5 shows the summary motivation scores for available sizes. The stimulus level “available sizes mentioned” (-.285) has less negative results then “sizes not mentioned” (-.571).

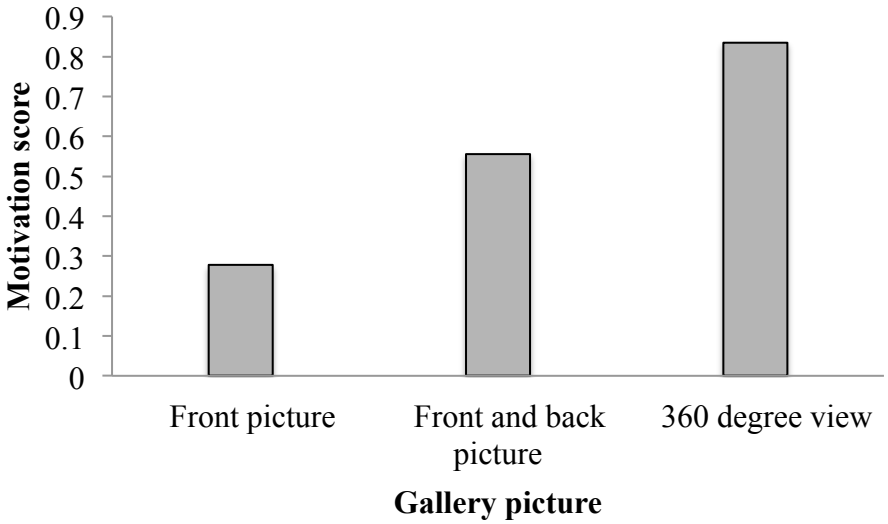

Figure 6. Motivation scores for gallery pictures.

Figure 6 shows the summary motivation scores for gallery pictures, where the stimulus level “360 degree view” has the highest positive effect on the likelihood of purchasing the dress with a high motivation score of .834. The stimulus level “Front and back picture” had a positive motivation score of .556. The stimulus level “Front picture” also had positive effects with a motivation score of .278.

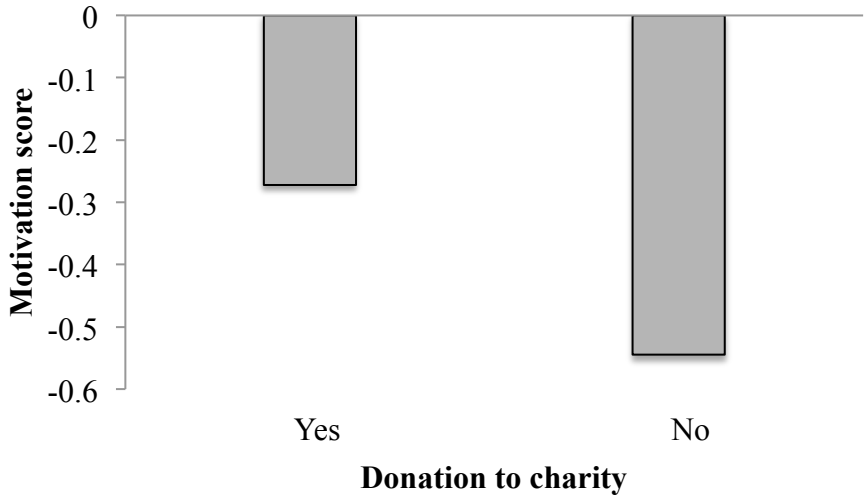

Figure 7. Motivation scores for donation to charity.

Figure 7 shows the summary motivation score for donation to charity. Both levels had a negative effect on the likelihood of purchasing the dress. The stimulus level “Yes” had less negative effects with the motivation score of -.272, and the stimulus level “No” had negative effects with the motivation score of -.545.

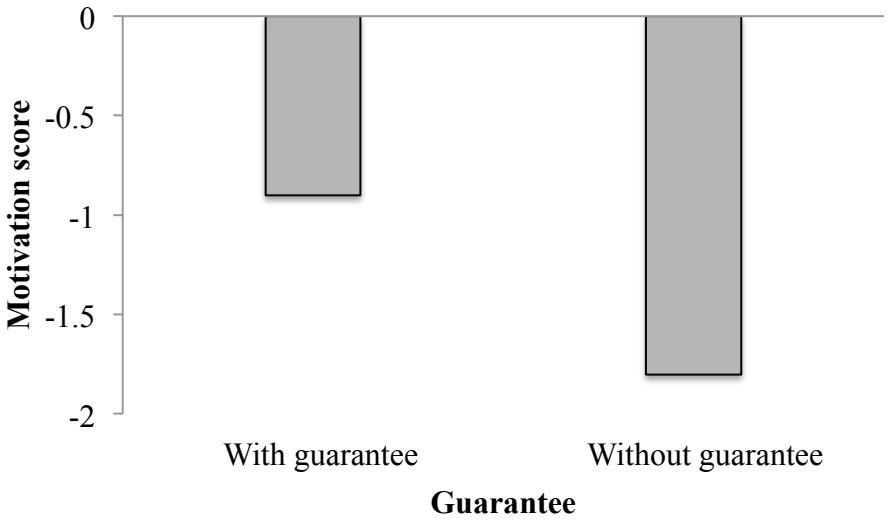

Figure 8. Motivation scores for guarantee.

Figure 8 shows the summary of motivation scores for guarantee. The stimulus level “With guarantee” had a motivation score of -.901 and negative effects on purchasing the dress. The stimulus level of “Without guarantee” had a motivation score of -.1.801 with a high negative effect on purchasing the dress.

Discussion

The results from this study show that price has the most motivational impact on the participant’s likelihood of purchasing the item online, and in that attribute the stimulus level 9,000 kr has the most reinforcing effect on the evaluation of the product. The results reveal that assumptions about price are confirmed and in line with former studies (Reibstein, 2002; Fagerstrøm & Ginhea, 2011). Guarantee to replace the product is the second highest attribute and these results are of high value to companies. The information section on a company’s Facebook page should then

include information regarding buyers' guarantee, the mode of placement of the order (which is the third most important attribute to the consumer), donation to charity (if any) and information about shipping as well. Free shipping had the most reinforcing effect on the likelihood of purchase in contrast to paid shipping and the option to pick the purchase up from the store. Gallery pictures should show the entire dress with a 360° view. Consumers want to see each side of the dress, not just the front like many companies are doing. The main results of this study is a good platform for the structure of study 2, where price is the main attribute and an eye scanner device is used to asses information regarding the fixation time on price, with different combinations of the placement of the price in different photos.

Study 2:

The main characteristic of consumer behavior is the pattern of benefits we create from the purchasing of an item, or in other words the reinforcement of the purchase or the punishment of paying (the loss of money and time) that follows each purchase we make (Alhadeff, 1982). When a consumer purchases an item online their behavior becomes reinforced in the form of pleasure caused by buying, owning and consuming. That same behavior is also punished by the loss of money, waiting time and so on (Fagerstrøm & Ginhea, 2011; see also Foxall, 2007). An eye tracking device is well suited to assess the actual behaviors which users display when making decisions about certain items in online settings. Eye tracking makes it possible to detect and analyze methods for information retrieval (Granka, Feusner & Lorigo, 2008). Use was made of an eye scanner device provided by MMR in laboratory settings and a Facebook album was constructed with photos from the Mania fashion store. Participants were randomly selected into two groups where they went through an album full of dresses and a little bit of shoes and jewelry.

Method

This study was a part of a larger study where a massive dataset was obtained from the eye scanner device in laboratory settings.

Participants

Members of the student population were chosen because they are the key target market for Internet and Facebook retailers. The participants were at the time both bachelor's and master's students from Reykjavik University who volunteered for the study. The compensation was in the form of participating grade. The sample size for this study comprised 34 students in total, both Icelandic and foreign. In these results only the data for the Icelandic students was used. That sample consisted of 13 females and 10 males who were divided into two groups randomly. In Group 1 there were 7 females and 5 males, and in Group 2 there were 6 females and 5 males. Data from 2 Icelandic females from Group 2 was not used due to missing data.

Demographic characteristics of participants are shown in Table 4 (appendix B). The most frequent age categories for both Group 1 and Group 2 was 20 -30, with 7 participants in each group (58.3%). Over 65% of participants in Group 1 were bachelor's students and over 90% in Group 2. 4 participants (33.3%) in Group 1 had an average Facebook use of 16-20 hours per week and in Group 2 half of the participants (33.3%) used Facebook for 5-10 hours per week.

Measures

Personal information was assessed with a post-study questionnaire considering both basic demographic information (e.g., name, contact, age, gender, education), as well as online information (e.g., average internet use per week in hours, average Facebook use per week in hours). There were also questions regarding the experimental process (e.g., clearly explained, easy to understand, completed in

reasonable amount of time). In the end participants was also asked both to rate the item based on their impression of it, and the quality of each item separately (appendix G).

Research design and data analysis

Descriptive statistics were calculated to provide information about participant's characteristics as well as prevalence of Internet and Facebook usage. An independent t-test was then used to examine the main predictions, different positioning of the price and the use of a model versus no model in the pictures.
A Tobii eye scanner device and computer were used to record participant response. The procedure was pretested with a pilot study of 4 participants to maximize the chances that instructions were clear and the procedure reliable.

Area of interest (AOI) is a feature in the eye scanner device, which makes it possible to specify an area of interest and analyze that separately from other areas and quantifying the data. This gives the researcher great insight into the number of fixations, fixation time and even pupil dilation as displayed in each area (Tobii Technology, 2008; Granka, Feusner & Lorigo, 2008). In this study fixation time in seconds was presented as a dependent variable.

A *heat map plot* was used to visualize the gaze behavior of a selected group of recordings. It consists of a transparent background and highlights areas where the participants have been looking as seen in Figure 11, 12, 13 and 14. The heat map displays three different colors: green, yellow and red. The red color indicates that maximum fixation length is represented, and the green the minimum fixation length, with yellow in between (Tobii Technology, 2008).

Procedure

Bachelor's and master's students from Reykjavik University were referred to the study by professor and researchers. The experiment took place at Reykjavik University in a closed office environment. Participants were randomly divided into two groups. The difference between groups was mainly in the positioning of the price in the album presented. In Group 1 the positioning of the price was on the left side of the picture area in black bold letters with red border around it. The positioning of the price was then divided into two packages for each group. In Group 1, package 1 the price was presented with a full body image of the model Maria and the price next to her on the bottom left with red borders around it. In Group 1, package 2 the price was in black bold letters with a red border right next to the dress presented on a mannequin. In Group 2 the position of the price was on the right side of the picture, below company details and above likes and comments, for both package 1 and package 2. In package 1 the model, presented the dress and in package 2 the dress was presented on a mannequin.

At first the procedure was explained to the participant in detail and their name was entered into the eye scanner device. The device starts by analyzing the eye position, where both eyes should be in the middle of the screen (seen appendix F). When the positioning is correct a calibration of the eyes starts and the participant follows a number of calibration points that move around the screen. When the participant has looked at all points, the calibration result is shown (see appendix F). If the results indicate that the points are not in the right place a re-calibration was conducted. When the calibration is complete the recording of the first session starts. Participants followed the same procedure two times with a 2-minute break in between sessions. Dividing the experiment into two sessions was meant to minimize threats to

internal validity and counterbalance the effects of external variable effects. When those two sessions were over the participant answered a post-study questionnaire.

Results

To compare the mean fixation time spent on the attribution price for the values *model* and *no model* for both groups, an independent t-test was construct.

Figure 9. Heat map results for Group 1 and Group 2.

Figure 9 shows the heat map results for areas of interest (AOI) in four separate pictures for both Group 1 and Group 2. Package 1 is on the left side and on the right side is package 2. For Group 1 both price and size is placed in the picture in black letters with a red border around it. For Group 2 the placement of the price is on the right side of the picture below *company details* and above *likes and comments*. As the figure illustrates the dress and the model's face is getting a large amount of fixation time, on the expense of other attributes like price. When price is presented with a mannequin, the dress and the price gets greater amount of fixation time and attention.

Also the price seems to get more attention and fixation when it is placed in the picture, right next to the dress. When it is presented on the side, above *likes and comments*, the fixation time and is slighter.

An independent-samples t-test was conducted to compare mean fixation time spent on the attribution price for the values *model* and *no model* in Group 1 for female participants. There was no significant difference in scores for *model* (*M*=2.82, *SD*=2.41) and *no model* [*M*=4.62, *SD*=3.54; *t* (26)= 1.57, *p*= .13]. The magnitude of the differences in the values was medium (eta squared= .294).

An independent-samples t-test was conducted to compare mean fixation time spent on the attribution price for the values *model* and *no model* in Group 1 for male participants. There was no significant difference in scores for *model* (*M*=3.05, *SD*=1.51) and *no model* [*M*=5.30, *SD*=2.81; *t* (18)= 2.229, *p*= .039]. The magnitude of the differences in the values was medium (eta squared= .465).

An independent-samples t-test was conducted to compare mean fixation time spent on the attribution price for the values *model* and *no model* in Group 2 for female participants. There was no significant difference in scores for *model* (*M*=1.44, *SD*=1.30) and *no model* [*M*=2.10, *SD*=1.94; *t* (22)= .989, *p*= .33]. The magnitude of the differences in the values was medium (eta squared= .206).

An independent-samples t-test was conducted to compare mean fixation time spent on the attribution price for the values *model* and *no model* in Group 2 for male participants. There was no significant difference in scores for *model* (*M*= .865, *SD*=1.25) and *no model* [*M*=1.28, *SD*=3.10; *t* (18)= .395, *p*= .698]. The magnitude of the differences in the values was small (eta squared= .093).

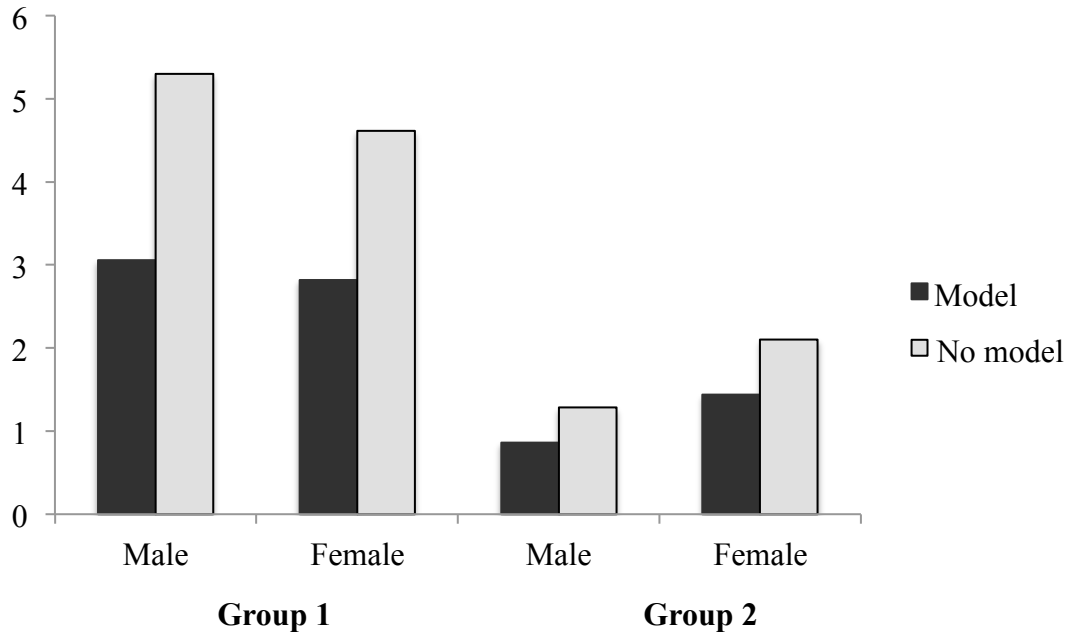

Figure 10. Mean fixation time spent on the price for Group 1 and 2.

Figure 10 illustrates the results from the independent t-test for Group 1 and Group 2, or difference between mean fixation times spent on price for package 1 (model) and package 2 (no model) for both female and male participants. Results indicate that mean amount of fixation time on price is higher when price is presented with no model, rather then model for both genders.

Figures 11 and 12 show the mean fixation time spent on each area of interest (AOI), in two separated sessions for both female Groups.

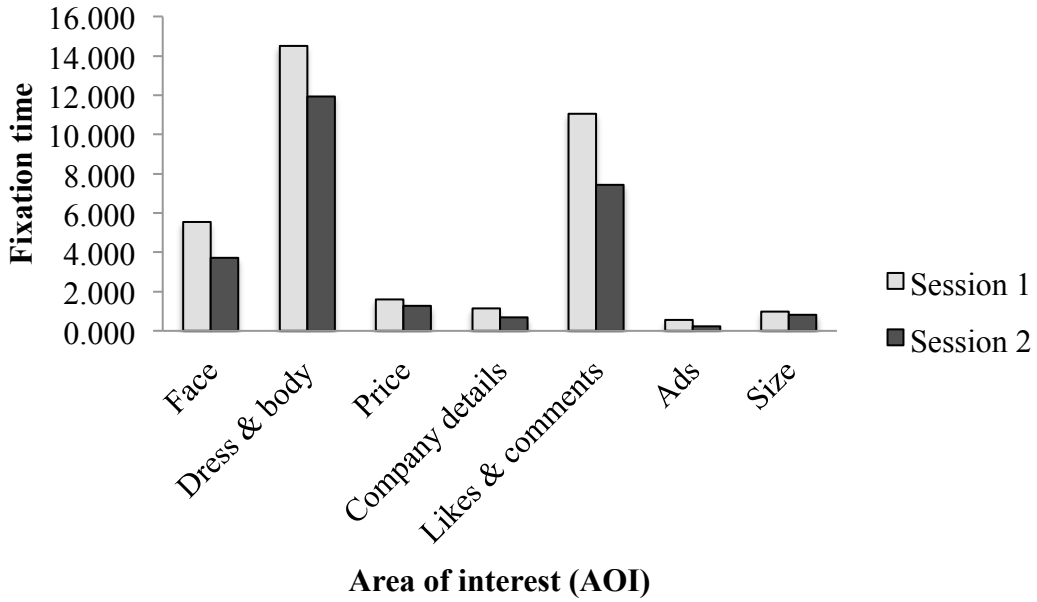

Figure 11. The mean fixation time spent on area of interest (AOI), for females in Group 2, package 1, both sessions.

As seen in Figure 11 the mean fixation time for Group 2, package 1 (with model), for dress and body is the highest with the mean of 14.5 seconds spent on average in session 1. Next are likes and comments with 11 sec. in session 1 and 7.4 sec. in session 2. The model's face is also getting a good amount of attention with the average of 5.6 sec. in session 1 and 3.7 sec. in session 2. Price has 1.6 sec. on average in session 1 and 1.3 sec. in session 2. Other AOI such as ads, company details and size are all under 1 second.

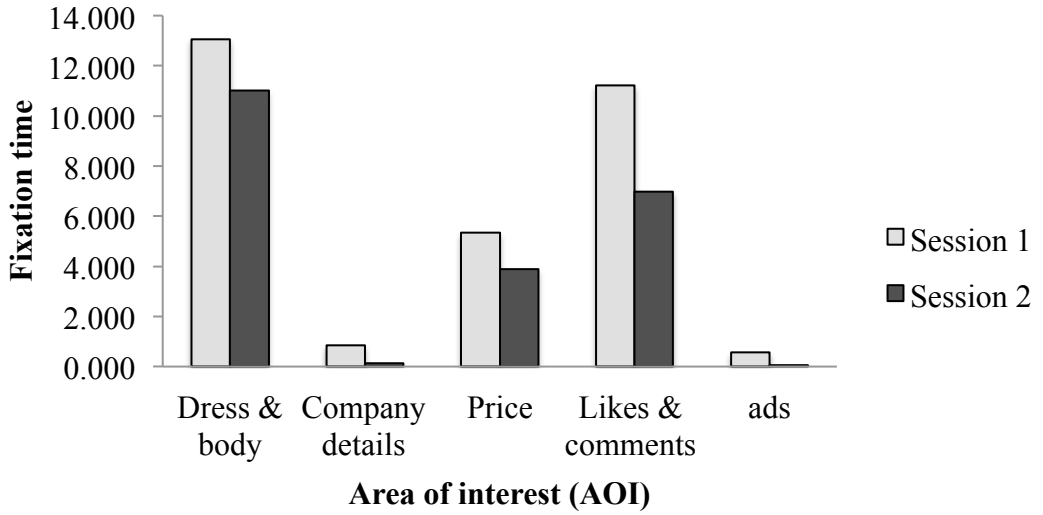

Figure 12. The mean fixation time spent on area of interest (AOI), for females in Group 1, package 2, both sessions.

In Figure 12 the mean fixation time spent on different AOI for package 2 (no model) is presented with the discrimination between two sessions. In session 1 dress and body has the mean fixation time of little more then 13 seconds, with the same results for likes and comments. In session 2, likes and comments get much less attention than in session 1 with the mean of 7 seconds. Price gets mean attention for 5.3 seconds in session 1 and 3.9 seconds in session 2. Ads and company details get a small amount of fixation time in regards to other areas.

Discussion

The attributes mentioned in the study are important in analyzing online consumer behavior. By using the area of interest (AOI) specification in the eye-scanning device, it is possible to identify which of these attributes are important when it comes to consumer attention. It was also relevant to use two sessions for all the photos, because behavior analyses uses a structure of replication for determining certain behavior. This second research was based on the results from the conjoint study (study 1). Price was the main focus and the importance of the fixation time participants spent on price, in line with the positioning of the price. Results show that

price gets more attention when it is not combined with a model in the picture. Even though the results were not significant, there was a relatively big difference between male and female participants in the mean fixation time spent on price for packages 1 (model) and 2 (no model). By analyzing different attributes by changing the positioning and layout, it is possible to increase the time spent on each attribute.

Both these studies emphasize the importance of experimental analysis of online behavior. With the advent of Internet and various online communication platforms, online marketing has moved on to a whole new level. Hence it is of utmost importance to organizations to understand and predict online consumer behavior. With the eye tracking technique, it is possible for researchers to have a better understanding of online behavior. The results given in both studies will add a value for companies engaged in Facebook marketing, as well as for the entire online marketing community. Former researches (Fagerstrøm, 2010; French, 2003; Reibstein, 2002) has identified price as the main motivator for an online purchase. Companies could use information about both positioning and value of the price and to derive more value from their Facebook page.

The main purpose of this study was to add value to the effectiveness of online marketing. The lack of effectiveness has been noted as a possible obstacle to Internet advertising (Dreze & Hussherr, 2003; Novak & Hoffman, 1997), and therefor the data created from both studies should immense value and give an opportunity for further research on Facebook marketing. Even though the main attribute in both of these studies were price there were others that generated interesting results. Ads for example did not get any valid attention even though it is the only attribute that involves expenses for the companies in Facebook marketing. This is an interesting area for future research and gives an opportunity to try to make more value of it for

behavior analysis. Next research steps will be to get into more detailed analysis of consumer behaviour online and develop the dataset even further.

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Appendix A

Eyðublað fyrir samþykki

Nafn þátttakanda : _____

Heiti rannsóknar: _____

_____

Nafn rannsakanda: _____

Merkið í reiti

1. Ég staðfesti hér með að ég hef fengið upplýsingar um rannsóknina og fengið tækifæri til að spyrja spurninga ☐

2. Ég er sáttur við skilning minn á þeim upplýsingum sem mér hafa verið gefnar og hef fengið tíma til að íhuga þær. ☐

3. Ég geri mér grein fyrir að þátttaka mín er sjálfviljug og að ég hef rétt á að hætta þátttöku hvenær sem er, án þess að gefa skýringu á því, og án þess að það hafi áhrif á löglegan rétt minn. ☐

4. Ég samþykki að taka þátt í tilgreindri rannsókn. ☐

_____	_____	_____
Nafn þátttakanda	Dagsetning	Undirskrift
_____	_____	_____
Rannsakandi	Dagsetning	Undirskrift

Appendix B

Table 4. Sample characteristics

Demographic variables	Frequency (percentage)	
	Group 1	Group 2
Age category		
<20	1 (8.3%)	0 (0%)
20-30	7 (58.3%)	7 (58.3%)
31-40	2 (16.7%)	5 (41.7%)
41-50	2 (16.7%)	0 (0%)
Education level		
Master	4 (33.3%)	1 (8.3%)
Bachelor	8 (66.7%)	11 (91.7%)
Average Internet use per week in hours		
5-10	3 (25%)	0 (0%)
11-15	1 (8.3%)	3 (25%)
16-20	2 (16.7%)	1 (8.3%)
> 20	6 (50%)	8 (66.7%)
Average Facebook use per week in hours		
< 5	3 (25%)	0 (0%)
5-10	2 (16.7%)	4 (33.3%)
11-15	0 (0%)	3 (25%)
16-20	4 (33.3%)	2 (16.7%)
>20	3 (25%)	3 (25%)

Appendix C

Spurningalisti

1. Nafn: …….
2. Nánari upplýsingar:

   Gsm: ……

   Tölvupóstur: ……
3. Kyn:

	KK		KVK

4. Aldurs hópur:

	< 20 ára		20-30
	31-40		41-50
	> 50		

5. Menntun:

	Ph.D.		MBA
	Master		Bachelor degree
	Diploma Certificate		Menntaskóli
	Annað		

6. Starf (Ef þú ert í námi, vinsamlegast nefndu fyrra starf):

   ……
7. Meðal internet notkun á viku í klukkustundum:

	< 5		5-10
	11-15		16-20
	> 20		

8. Hlutir verslaðir á netinu síðustu 6 mánuði:

	< 5		5-10
	11-15		16-20
	> 20		

9. Hversu líklegt er að þú komir til með að versla á netinu næstu 6 mánuði:

Mjög ólíklegt	Ólíklegt	Veit það ekki	Líklegt	Mjög líklegt

10. Hlutir verslaðir í gegnum Facebook síðustu 6 mánuði:

	<0		1-5
	6-10		>10

11. Hversu líklegt er að þú komir til með að versla í gegnum Facebook næstu 6 mánuði:

Mjög ólíklegt	Ólíklegt	Veit það ekki	Líklegt	Mjög líklegt

12. Þú ert að velta því fyrir þér að kaupa þér kjól sem þú sérð á Facebook. Við kaup á slíkum kjól viltu sem neytandi frá ákveðnar upplýsingar með vörunni um mismunandi eiginleika sem tengjast kaupunum. Vinsamlegast merktu eiginleikana eftir mikilvægi, þar sem 1 er mikilvægasti eiginleikinnn en 7 er minnst mikilvægastur:

Appendix D

Eiginleikar	Röð
Verð	
Stærð	
Sendingarleiðir vöru	
Gæði og uppsetning mynda	
Pöntunarleiðir	
Ábyrgð (skil og skipti)	
Þátttaka í góðgerðarstarfsemi	

Nafn:……

1. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

2. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

3. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

4. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

5. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

6. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

7. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

8. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

9. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

10. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

11. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

12. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

13. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

14. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

15. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

16. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

17. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

Comments: ……

18. Hversu líklegt er að þú kaupir kjólinn af þessari Facebook síðu?

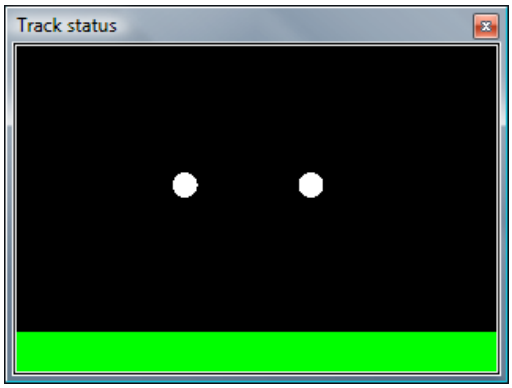
Mjög ólíklegt	Frekar ólíklegt	Veit ekki	Frekar líklegt	Mjög líklegt
1	2	3	4	5

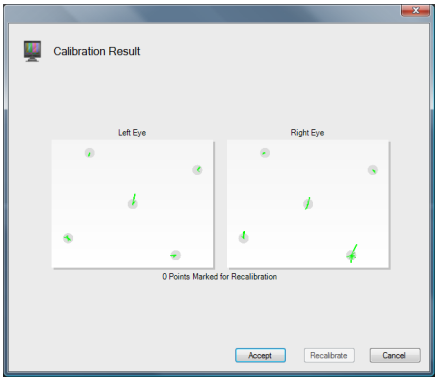
Comments: ……

Appendix E


Verð:
Sendingaleiðir:
Stærðir:
Góðgerðarstarfsemi:
Ábyrgð:
Pöntunarleiðir:
Manía
Like This Page · 30 January
Like · Comment · Share
64 people like this.
80 shares
View previous comments
5 of 55
Sólveig María Gunnarsdóttir KVITTTT
11 February at 22:30 · Like
Hrafnhildur Brynjarsdóttir kvitt
11 February at 22:43 · Like
EXAMPLE

Appendix F


Track status


Calibration Result
Left Eye
Right Eye
0 Points Marked for Recalibration
Accept
Recalibrate
Cancel

Appendix G
Post-study Questionnaire

13. Name: …….

14. Contact details:

E-mail: ……

15. Gender:

	Male		Female

16. Age group:

	< 20 years		20-30
	31-40		41-50
	> 50		

17. Educational level:

	Ph.D.		MBA
	Master		Bachelor degree
	Diploma Certificate		High School
	Others		

18. Average Internet use per week (in hours):

	< 5		5-10
	11-15		16-20
	> 20		

19. Average Facebook use per week (in hours):

	< 5		5-10
	11-15		16-20
	> 20		

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Comments
Experiment process was clearly explained						
Experiment process was easy to understand						
Experiment was completed in a reasonable amount of time						