Psychology Study of Human Experience

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Abstract:

In today's world, making an application that caters to the needs people and becomes popular among the masses has a lot to do with the aspect of human psychology more than any technical aspect. Once the philosophies of psychology are clearly taken into account, they can be successfully used in UX, UI and website design of any application. If the components of both fields are unified well together then they become one of the key reasons for the success for any product in the market place. These ideologies of psychology can also be creatively used in mass marketing are identical to the ones being used for UX and web design. We have a crucial need to understand what goes in the mind of the primary user when they interact with the subject and how the knowledge of this can positively and negatively affect the success of the application. This is why this research in the field of ergonometric and ethnology is so needed as it explains the motives why target consumers might sometimes do the opposite than what is generally accepted of them.

Keywords:

User Experience (UX), Human Psychology, Emotional Analysis, Supervised learning, Unsupervised learning.

1. Introduction

In this paper, we will try to uncover the connection between the two components at stake here. We will try to unravel how a deeper understanding of basic human psychology can have a riveting effect on the overall appeal of any application, how we can apply and exploit these loopholes in the human psyche to provide a seamless experience to the user and also in the process look at some examples of the same. Researchers of human-technology interaction and application development have started to focus on the "experience" part of human computer interaction and naturally on the psychology of human nature which goes hand in hand with this type of technology. [1] However, the study is marred by the fact that there is no clear definition or formula that can be applied on the design process for every application as the manner of interaction of the user with the application differs from user to user and depends on the personal preference of any person. Therefore, there is no foundational data or

concrete strategy while one goes into UX design and also there is no introductory framework, which would allow for comparing the of accumulated data for comparison or further pattern finding. [2] Even though he technological aspect of the design of shopping or any other commercial has been completely explored but we do lack a key element that is human emotions and psychology, causing the existing data to become null and void. In our arrangement we keep in mind how technology can benefit us to realize our goals. When there are individuals interacting with the world, it is accompanied by all sorts of mental activities and experiences, which are of key interest. A clear understanding of the egoistic environment is important along with the interaction of that individual with the people around them. [3] The problem that arises here that the process of defining the scope of human and computer interaction is notably difficult. This makes the elaborative study of experience in human-technology interaction laborious, but also prompts researchers to seek better understanding of how knowledge can be understood.

The interest in how man and machine interact and how technical developers should consider a viable experience, has been convoyed by various interesting philosophies widely concerned with polarizing involvement in human-tech interaction, and measures to effectively study and understand the phenomenon. [4] Evaluations of user experience theories and methods are agreeing on one fact that there is no standard definition for a field like this and methodologically mismatched positions in the field can always be defined. [5] This observation is never limited to the scientific study of experience in man-machine interactive atmosphere but also there are conflicting positions between developers on what user experience is and what it should be. Naturally, these polarized views are not the major problem at hand, and indeed scientific and technological advancement has always depended on deliberations concerning incompatible processes and approaches to the same. [6] However, the dilemma here is that it is the time has come to lay down the ground rules as the new century of technology clock in. This would help the broadcasting of contending theoretical perspectives, something which is rarely seen in the field of user experience research, and it would also clarify the highly anticipated role of psychology in the design of new technologies.

Maybe one of the main reasons for the hurdles in this process is the different wiring of our brains and different compatibility of each one to receive and process data differently. [7] Consciousness is one of the most debated concepts in viewpoint, thinking, and intellectual science. It has been so since the question concerning human existence was established since the time of Socrates. The study of user experience suggests the study of consciousness [8] which inherently points to psychology, and therefore it is comprehensible how user psyche of user experience is supposedly problematic. An easier way is to elucidate important components or dimensions of user experience, and see how important they are is through documentation over the years. [9] At the moment, the amount of such magnitudes is large, and it is possible that user experience can never be fully comprehended in terms of its undefined dimensions. But the problem is not automatically in defining UX for human psyche in its totality. A more properly oriented way is to govern, which dimensions of user experience can be conceptualised in our user psychological terminologies, and focus on exploring them in order to create an efficient and valid explanatory framework to be used in designing applications.

Finally, the question remains, what are the most user psychologically relevant magnitudes of user experience? In a review of user experience measurement apparatuses, [10] Bargas, Zihva, Avila and Hornbæk provide the basic eight dimensions: sentiments, delight, aesthetics, hedonic class, engagement, inspiration, improvement, and hindrance. Each of the measures are regularly experienced by primary users in day to day use of any application? For example, are delight and hindrance distinct categories, separate from the aforementioned emotion? Following the categorisation of human [11] psychological life by Kant, there are three distinct faculties: cognition, sentiments, and inspiration. From the list of user experience dimensions above, 'sentiments', 'delight', 'improvement', and 'hinderance' would be related to the sentiments category, while 'engagement' and 'inspiration' would be more associated with Kant's inspiration category. Further, aesthetics or personal preference is also a big part of the basic principles. [12] Thus, it seems that from the diverse categories of human mental lifetime, emotion seems to be most relevant to user experience. Emotion is in no way to be left behind or ignored while one designs or

develops any product or application. It is widely known that the emotional response to any situation depends on the parameters and scenario surrounding any test so there will always be a significant amount of difference in human response if we, perhaps, choose an unsupervised or supervised setting for any test. As already apparent in the list of user experience scopes, inspiration has been named as an imperative aspect of user experience. [13] However, as will become obvious hereon, inspiration, emotion and cognition always need to be defined separately, and thus it will be essential to define user experience in such a way which simultaneously deals with all three spheres of human mental life. Here, the examination starts with sentiments, and the conclusion that emotion must be one of the fundamental user experience dimensions can be justified from the perspective of psychology. Although there are foundational disagreements concerning the details of the emotional processes, few disagree on the belief that emotion is inseparably joined to mindful experience. Therefore, in order to establish a user psychological outline for reviewing user experience, one of the main avenues of it, needs to be studied vigorously. This implies analysing the emotional aspects of human-technology interaction with contemporary psychological theories, concepts, and methods. In other words, what is necessary, is user psycho-analysis of emotional user experience.

2. Literature Survey

Tauber believed that (1973), hassle free experience is an important part of consumerism-based activities. Shopping is not just about the material goods, but also about the overall experience of the purchase. This practice is determined on the basis of a shopper's shopping objectives, their prospects and obviously what their needs are (Demangeot & Broderick, 2005). Inspiration for any shopping experience while it is online is a significant factor to ponder upon whenever one needs to analyse this phenomenon of an online shopping experience (Swatman & Chin, 2005). Holbrook and Hirschman (1983) cemented the fact that it is of paramount importance to create popularity and customer base via good involvements to build a loyal customer base that sticks to the brand no matter what. Customer experience involves topics over

various spectrum of the industry but the most important aspect is engaging with the customer's ideas to set levels of optimum satisfaction and create value for money organisation where the services speaks volume about the products for every customer. Likewise, an online shopping service provider's job is to establish a suitable and calm environment to enable the prospective customers in gaining an overall positive experience while shopping online from anywhere in the world (Pentina et al., 2012). Specially when someone shops online, they are not only dealing with the objective of dealing with the products, but also with the objective of dealing with the technology aspect of it (Demangeot & Broderick, 2006). Huang (2004) stated that the today's online shopping environment is exceedingly interactive and user friendly. The content or data of the website has to be accurate, inviting, detailed yet simple and above all duplicity free. A modern, abstract and intuitive website design is also needed to succeed in the e-commerce business (Colla & Lapoule, 2011).

The interaction between the humans can be observed from the point of view from technology as well as from the ethnography, psychology (Rosenberg, 2005 and Millen, 2001), as well as neuroscience (Johnson & Proctor, 2012; Parasuraman & Rizzo, 2007). But the most important factor has to be undoubtedly the psychology factor because humans not only interact with the interface using the motor elements but also via their neural capacity combined with emotions which can be studied here (Card, Moran, & Newell, 1985), and it, as a whole, makes humans what we are (Moran, 1982; Saariluoma, 2003; Saariluoma & Oulasvirta, 2011). The objective of user emotive research is to explain the relation between man and machine and also to find any viable pattern in the emotional responses (Saariluoma, 2005). Such clarification requires illumination of any singularities and their allied glitches in the linguistic of psychosomatic theory. As development is=n science and technology has led to leading innovations making lives of people simpler by the minute, similarly it is hoped that developments in researches in this field will also lead to innovation in fields having a major human component, specially website design and improved user experience as in the case mentioned here (Pahl, Beitz, Feldhusen, Sahiban & Groete, 2006; Ulrich, Gokhale & Eppinger,

2008). Researchers and developers everywhere are giving the long due attention to the psychology factor of user experience (Hassenzahl, 2009, 2010; Kuniavsky, Rasputin 2002). Methodologies such as affective design (Helander, Hosseini & Khalid, 2007; Khalid, 2005), Kansei engineering (Nagamachi, 2001, 2014), sensitive design (Norman, Faiser 2004), design for pleasure and purpose (Jordan, 2002), and fun-ology (Hassenzahl, Blythe, & Reed, 2001) put the stress on inspecting users as emotionally intelligent and experienced beings. Further, researchers also believe that a good and effective interface even has the ability to change the current emotional state of the user usually for the better. For full effect of this schema, the foundations of UX and UI research should be based on psychological ideas, moralities, and models. In other words, a user psychological analysis of user experience is required and is a must for the world today as interactive applications are on the rise and it is getting crucial by the minute to better understand the hidden human psyche that will make or break the current trend.

3. *Methodology- An Overview*

Online shopping was chosen as the context of the study because of its familiarity. Currently almost everyone has used or at least heard about online shopping. Furthermore, webpages offer the chance to conduct relatively naturalistic tasks, even in laboratory settings, because the experimental tasks can be conducted using an ordinary laptop. There were few websites taken for seeing the reaction: Amazon and Ikea. These two websites were purposely chosen because of their varied level of familiarity with the Indian audience. Amazon is a widely popular shopping site in India while Ikea is relatively unknown. We are going to conduct two experiment on a group of individual users with slight variation in conditions to check their effect on the psyche of the user. It is very important for the tester to know that it is not them who is being tested but the interface.

The primary experiment will be the manipulation of stance of user. The users will be asked to do the following:
- Observe the webpages
- Conduct easy tasks (order something)

- Conduct hard tasks (order a product from a specific seller)
- Conduct impossible task (order a product but leave the product at neighbour)

The approach that we took for the experiment is defined in the following steps:
- Objectives: What is it that is still out of reach and need to be understood.
- Hypotheses: What can be said about the mental state of the users?
- Methods: Based on the given resources, which methodology will be most suitable?
- Conduct: Collecting data under the two given test conditions.
- Synthesize: Collecting sufficient evidence to fully understand the scenario and be in a position to approve or disprove the pre-conceived notions or hypothesis.

This is the basic strategy that we have adopted throughout the process of the analysis, from the experimentation to analysis. There are going to be two tests that are going to be conducted on the subjects when they are going to use the websites. One is going to be in the one-on-one monitored environment and the other in a remote location. The monitored or supervised testing is the one where the user will be monitored and even guided by the test taker at every step of the way and in the end of the session the user will be faced with a face to face interview about their emotional state post the interaction with each of the online shopping site. Whereas in the unmonitored or remote testing the candidates were left on their own to freely interact with the website with little or no human contact at any point of time. This creates a more relaxed environment for the user and it is interesting to see how the emotional state of the user varies. The interaction can be recorded by the means of a camera, however we excluded that here and as far as the questionnaire was concerned, the data was collected by the means of a quiz which the participants submitted online.

3.1 Experiment 1

In this we will take a group of 30 students (15 male and 15 female students) for the experiment. Their mean age was 19.4 and their age range was 19-21. The participants would be taken from our university and friend circle. As being students, they were already well known with online shopping and had used in the past. In the

experiment we will measure completion time to find out the task efficiency; more efficient task completion results in faster completion time and this is taken as the only measure of performance. The first experiment will be performed in a monitored environment where the testers are instructed at every point. They will be provided with a set of tasks that are set at different difficulty levels. After their interaction they will be faced with a face-to-face questionnaire where their emotional levels will be tested.

3.2 Experiment 2

In this we will take a group of 30 students (15 male and 15 female students) for the experiment. Their mean age was 19.4 and their age range was 19-21. The participants would be taken from our university and friend circle. As being students, they were already well known with online shopping and had used in the past. These are the same group of people from the above experiment. In the experiment we will measure completion time to find out the task efficiency; more efficient task completion results in faster completion time and this is taken as the only measure of performance. The second experiment will be performed in a non-monitored environment where the testers perform based on their will. They will be provided with a set of tasks that are set at different difficulty levels. After their interaction with the two different websites, they will be provided with an online questionnaire with no human involvement where their emotional levels will be tested. This environment is non-supervised, non-monitored and remotely located

4. Measurement Standards

The psychological state of the participants will be analysed after each experiment concludes. This measurement will be evaluated on the user and the efficiency of the website. The following categories of questions will be presented to the user:

- ASQ: which is After Scenario Questionnaire
- NASA-TLX: which is NASA's task load index

- SMEQ: which is Subjective Mental Effort Questionnaire
- UME: which is Usability Magnitude Estimation
- SEQ: which is Single Ease Question

Our measurement of the user's inner state will be based on vigilance, efficacy, determination, frustration, annoyance, confusion, success and anxiousness. These 9 factors provide a wholesome view of the mental state of the user after each experiment.

Simultaneously these measures also provide a deep insight about the characteristics of the website such as usefulness, usability, desirability, accessibility, credibility and valuability.

5. Tasks List

The following tasks were given to each user after each session post their supervised and unsupervised session. The following tasks enable the user to experience the full extent of each website.

Your birthday is coming up and you want to buy a fun birthday gift for yourself from the two stores. You know about Amazon and Ikea and decide to book your present online via these websites. You need to go through some set of steps to achieve the same and get the birthday present. The steps are provided here and you must perform them in the given sequential order as stated here. Remember d not panic if you are not able to figure something out. It is the interface that is being tested not you. Perform the following activities to achieve the task at hand:

- Look around on the home page. What seems interesting to you?
- How would you go about finding a present for yourself?
- After selecting the desired product, try to find some reviews about it.
- Are you able to find the details and specifications of the product?
- Your friend recommended a nice investment piece (Amazon- Hedwig Statue, Ikea-

LANKMOJ Folder with stickers). Try to look up reviews and price range for it.

- Try to book the product. Observe the ease of booking a product.
- Give your one-line review to the customer service.

vi. Anxiousness
vii. Confusion
viii. Success
ix. Confidence

6. Questionnaire

The following questions were asked to the participants post their experiment to measure the level of their emotional state. These cover a wide array of emotions that any user might exhibit, ranging from frustration to determination. We feel that all these emotions will cover rather all spheres and give us a deep insight about the user's psyche post supervised and unsupervised learning.

Question: Rate from 1-5 your general feelings towards the experience based on the following (1 being the lowest and 5 being the highest score):

i. Vigilance
ii. Efficacy
iii. Determination
iv. Frustration
v. Annoyance

7. Result Analysis

On obtaining the results after the questionnaire, we take the data and analyse the data by plotting it in several different ways to get a visual representation of the user's emotions. Each analysis was once performed for a supervised environment and later for an unsupervised environment.

Analysis 1: Comparing each website for their average score for each emotion, visualized in a form of a bar graph.

Analysis 2: Comparing each website for their own emotional score for each user, spanning for each emotion. The analysis is repeated two times for each website. The results are visualized in the form of a line graph.

7.1 Supervised testing

a) Collected data

User No.	Vigilance	Efficacy	Determination	Frustration	Annoyance	Anxiousness	Confusion	Success	Confidence
1	5	5	3	1	2	2	1	3	5
2	4	4	4	2	1	1	1	4	3
3	3	5	5	1	2	2	2	5	4
4	5	3	3	2	2	3	3	4	2
5	3	4	4	2	2	3	2	3	3
6	2	5	4	2	2	2	2	4	3
7	4	3	5	2	3	3	1	5	4
8	5	5	3	1	3	2	3	5	5
9	3	5	3	3	1	1	4	4	5
10	4	5	4	2	2	2	2	5	5
11	5	5	5	1	3	1	3	4	5
12	3	4	2	2	2	2	1	5	4
13	1	3	3	3	3	4	2	2	4
14	5	4	1	2	1	2	3	4	3
15	3	4	2	2	2	3	4	5	5
16	4	5	4	1	2	1	4	3	4
17	5	2	5	3	3	1	2	4	5
18	2	4	1	5	4	3	1	4	4
19	3	4	5	2	3	1	3	3	4
20	4	5	3	3	2	2	2	4	3
21	5	5	4	4	1	4	2	5	4
22	5	4	5	2	2	2	2	3	5
23	5	3	4	1	3	1	1	5	2
24	4	3	2	4	2	2	2	3	3
25	5	5	5	2	1	3	3	4	4
26	2	1	3	4	3	5	2	5	5
27	5	3	4	1	2	3	3	3	4
28	5	4	1	2	1	2	3	2	3
29	4	4	2	3	3	1	2	2	5
30	3	5	3	2	2	3	1	4	4
Mean	3.86667	4.0333	3.4	2.23333333	2.16666667	2.233333333	2.233333	3.86667	3.96666667

Table 1. Dataset for Amazon

User No.	Vigilance	Efficacy	Determination	Frustration	Annoyance	Anxiousness	Confusion	Success	Confidence
1	4	2	1	3	2	2	3	3	4
2	3	2	4	4	3	4	3	2	3
3	4	3	3	3	3	1	2	3	4
4	3	4	2	4	2	2	1	4	2
5	2	3	4	3	1	3	4	2	5
6	3	1	4	2	2	3	4	2	2
7	4	2	5	4	4	5	3	3	3
8	3	3	2	5	4	2	3	2	4
9	5	3	3	3	1	3	2	3	2
10	4	2	4	4	3	4	2	1	1
11	3	3	2	5	4	2	4	4	2
12	3	4	4	3	3	3	3	4	5
13	4	5	3	1	2	4	5	4	3
14	2	3	4	3	2	2	2	3	4
15	2	2	3	4	3	1	1	2	2
16	3	3	2	3	3	2	1	3	4
17	5	4	2	4	2	2	1	5	5
18	3	5	3	5	3	4	3	4	5
19	4	5	4	3	1	2	3	5	5
20	5	4	5	3	2	3	3	3	4
21	2	3	5	2	1	2	4	3	2
22	3	2	4	3	2	1	2	2	2
23	1	3	3	3	3	4	3	2	1
24	3	1	2	4	2	2	3	1	1
25	2	3	2	3	4	3	4	2	4
26	2	3	3	2	2	3	1	3	2
27	3	3	4	3	4	4	5	4	4
28	4	2	2	4	2	1	2	3	4
29	2	2	3	5	3	3	3	2	3
30	2	3	4	2	3	2	4	3	2
Mean	3.1	2.9333	3.2	3.3333333	2.53333333	2.633333333	2.8	2.9	3.13333333

Table 2. Dataset for Ikea

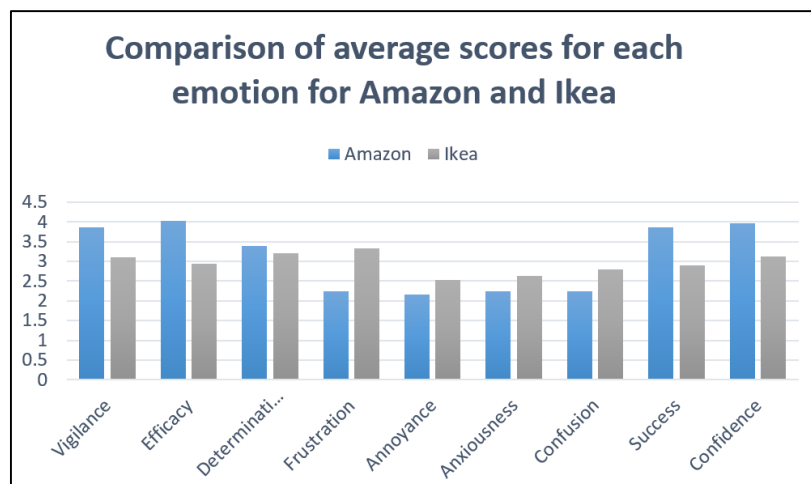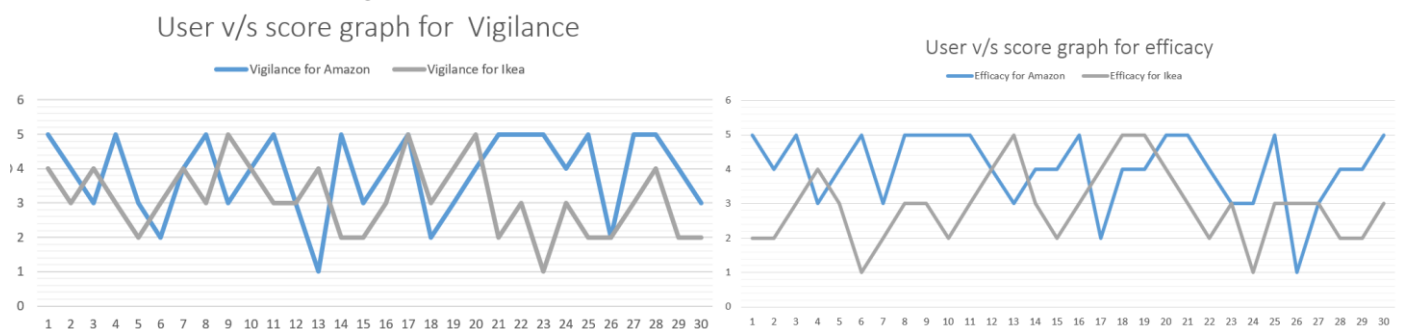b) **Bar graph (comparison of each emotion for the two sites)**

Fig 1. Average scores v/s emotion for Amazon and Ikea

c) **Line graph (comparison of each emotion by seeing variation for each user)**
The graphs below explain that the score of vigilance and efficacy account to
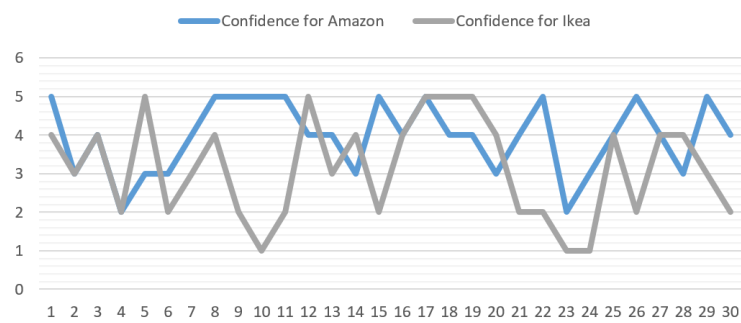
Fig 2. User v/s score graph for each emotion

d) Test setting

Image 1. Subject being guided during supervised testing process

7.2 Unsupervised testing

a) Collected data

User No.	Vigilance	Efficacy	Determination	Frustration	Annoyance	Anxiousness	Confusion	Success	Confidence
1	5	5	4	2	2	1	2	4	5
2	4	5	3	2	3	2	3	4	4
3	5	5	4	2	3	2	2	4	4
4	5	5	4	1	2	1	2	3	5
5	3	5	4	3	1	1	2	3	3
6	4	5	5	2	2	1	1	4	3
7	5	5	3	2	2	2	2	4	4
8	5	4	4	2	3	1	2	4	5
9	3	3	3	1	2	1	3	5	4
10	4	4	3	2	2	2	2	4	4
11	3	5	4	2	1	3	2	5	4
12	4	4	4	1	1	2	1	5	5
13	3	2	3	4	3	4	3	2	2
14	4	4	5	2	2	2	2	3	4
15	5	5	4	1	2	3	2	4	5
16	3	3	4	2	1	2	2	4	4
17	4	3	3	1	2	3	3	3	4
18	4	4	4	1	2	2	3	3	5
19	5	4	3	1	1	1	2	4	3
20	4	5	4	1	1	1	1	3	4
21	3	4	3	2	1	2	1	4	4
22	4	5	4	1	1	1	2	5	5
23	4	4	4	2	1	1	2	5	4
24	1	3	3	4	3	3	4	3	2
25	4	5	4	2	2	1	2	5	4
26	4	5	4	1	3	2	3	5	5
27	2	3	4	3	4	3	5	3	3
28	4	4	5	2	3	2	2	4	4
29	4	5	5	1	2	1	1	3	4
30	5	4	3	1	2	1	1	5	5
Mean	3.9	4.233333	3.8	1.8	2	1.8	2.166667	3.9	4.033333333

Table 3. Dataset for Amazon

User No.	Vigilance	Efficacy	Determination	Frustration	Annoyance	Anxiousness	Confusion	Success	Confidence
1	4	3	3	2	1	2	2	3	2
2	4	2	4	3	1	1	3	4	3
3	5	3	3	2	1	1	2	3	4
4	4	4	3	2	2	2	2	2	4
5	3	3	4	3	2	2	2	3	5
6	3	4	4	2	1	1	1	4	3
7	4	3	4	3	2	2	2	5	4
8	3	4	4	1	2	1	3	3	3
9	4	4	3	3	2	2	4	3	2
10	3	3	4	2	1	3	4	3	4
11	4	4	3	3	1	2	2	4	3
12	3	3	5	2	2	1	1	4	4
13	2	2	2	5	4	5	4	2	1
14	3	3	3	3	2	2	2	3	5
15	4	4	4	2	3	3	3	4	3
16	3	3	3	2	2	2	2	4	3
17	4	4	4	2	2	2	1	3	4
18	4	4	5	3	2	2	2	4	5
19	3	3	3	1	3	1	3	5	3
20	3	3	3	2	3	1	2	4	3
21	3	3	2	3	3	3	2	3	4
22	4	3	3	2	2	2	2	4	3
23	4	5	3	3	2	3	3	5	3
24	2	1	2	4	4	5	4	2	1
25	3	3	3	3	1	3	3	3	4
26	4	4	4	2	2	2	2	4	4
27	1	2	1	5	5	5	5	1	2
28	5	4	5	2	2	1	3	3	3
29	4	5	2	3	1	2	4	4	3
30	3	4	3	2	3	3	1	3	5
Mean	3.433333	3.333333	3.3	2.566667	2.133333	2.233333333	2.533333	3.4	3.333333333

Table 4. Dataset for Amazon

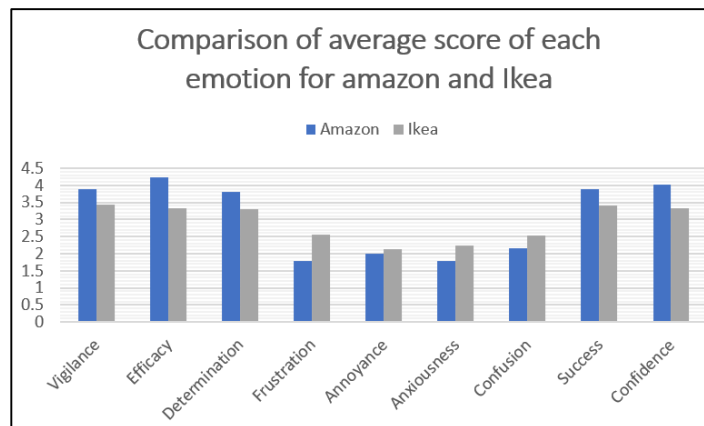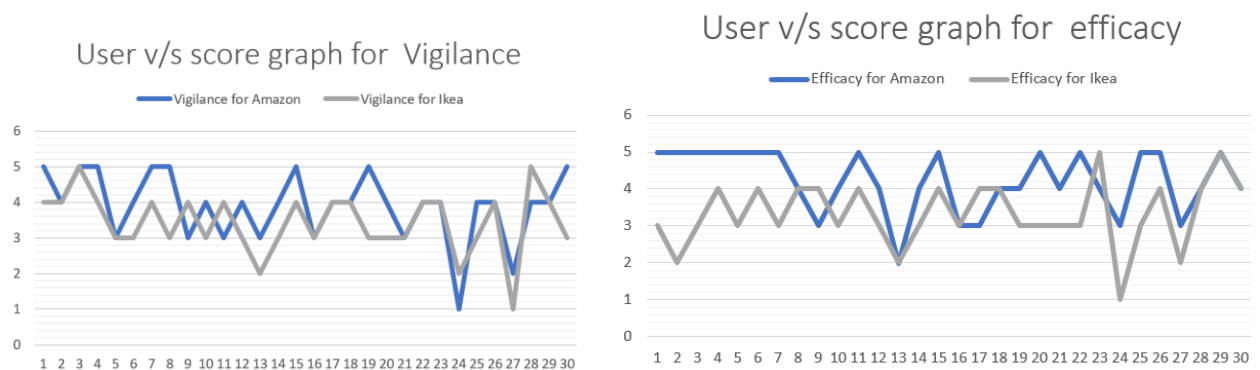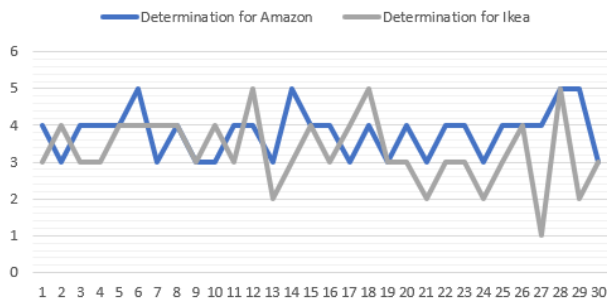## b) *Bar graph (comparison of each emotion for the two sites)*
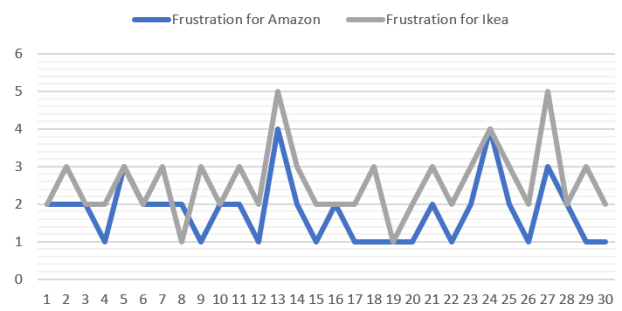

Fig 3. Average scores v/s emotion for Amazon and Ikea

e) *Line graph (comparison of each emotion by seeing variation for each user)*

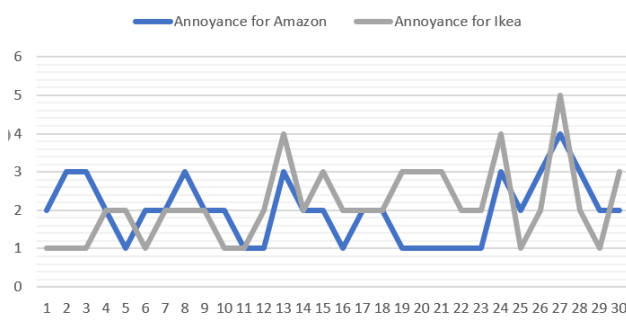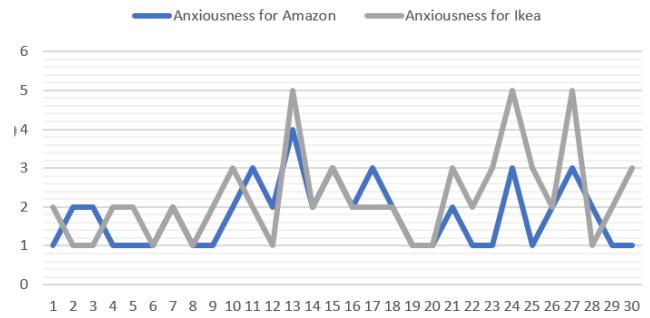User v/s score graph for determination
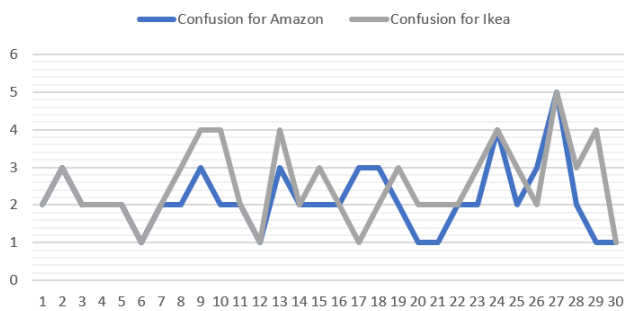
User v/s score graph for frustation

User v/s score graph for annoyance

User v/s score graph for anxiousness

User v/s score graph for confusion

User v/s score graph for success
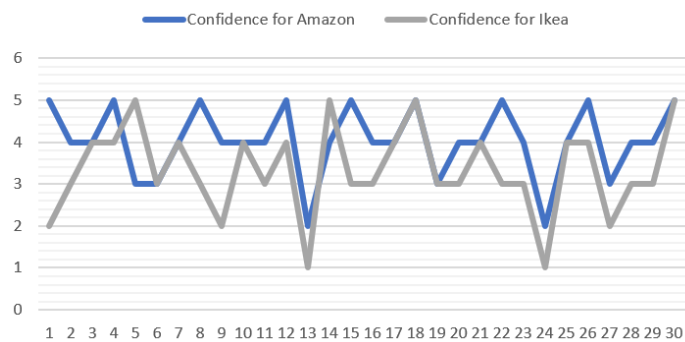
User v/s score graph for confidence

Fig 4. User v/s score graph for each emotion
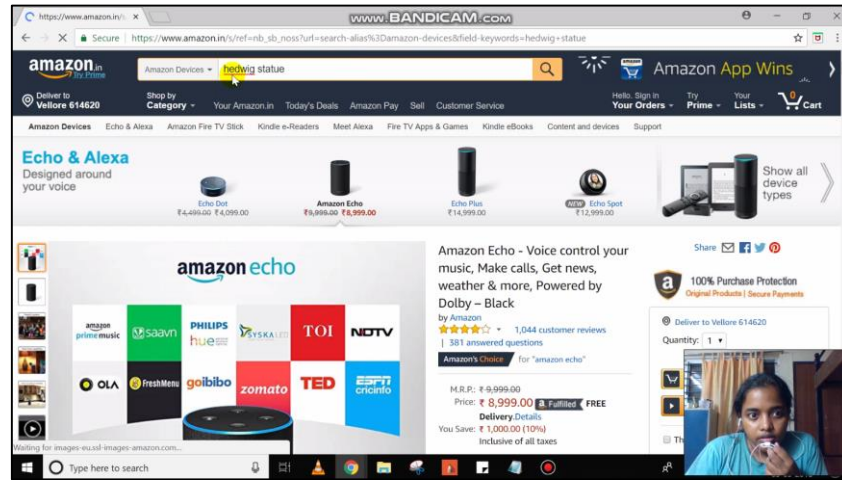
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c) Video snapshot

Image 2. Subject interacting with the interface during unsupervised testing process

8. Result Discussion and Inference

The data that we collected was very interesting to observe and collect. The atmosphere and the situations leading to each set of experiments were polarly different. Although the general trend as per the emotional response to the two interfaces had a linear and proportional relationship, there were still data differences that makes the all the difference as far as the user experience is concerned. This was the objective of our experiment and this is what we had set out to achieve from the onset. As human psychology suggests, there will be a difference in the emotional response of any subject based on the environmental factor, task at hand and emotional state at that particular instant. This study primarily focused on the first two. We tested the subject in two manners, one was supervised testing and another one was unsupervised testing. Although supervised testing is much more observant, it can have a negative affect on the psyche of the test subject by making them unnecessarily nervous. On the other hand, unsupervised testing environment is much more relaxed and lets the user be in their element, but here the problem arises when we the tester cannot measure the response of the subject in a very detailed manner. Another emotional response that we wanted to measure was based on the user's emotional response to a familiar site and to a fresh and new interface environment. Amazon and Ikea website were perfect candidates for the Indian scenario. We found that

there was significant amount of difference in positive emotions as well as negative emotions when the user interacted with the two different environments.

There are two level of study that we have included in this paper. One is different emotional response to a familiar interface vs emotional response to an alien interface which is being used for the first time. We took Amazon and Ikea for our experiment analysis. These two sites were put against each other in supervised as well as an unsupervised environment. As we can clearly observe in Fig 1, we observe that in a supervised environment Amazon, which is a familiar site score highly for positive emotions such as vigilance, efficacy, determination, success and confidence and scores low for negative emotions such as frustration, anxiousness, annoyance and confusion. The same trends continue for the unsupervised environment where Amazon scores highly for positive emotion and Ikea scores highly for negative emotions. There can be several reasons as to which this happens. As this is an online shopping environment where the shoppers will be investing their money, it is of utmost importance that they feel comfortable with the interface that they are using therefore it is better to use familiar interfaces where they intuitively use the functionalities and options that the website provide, rather than get stressed over the first hurdle to understand the interface also termed as learning time. The new shoppers get

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hassled over the task of understanding the new format that they cannot focus on the task at hand, which is shopping. This is the reason we can deduce as to why Ikea scored poorly and Amazon scored so well in our tests.

The second layer of our testing was to test the emotional response of the test candidate, his/ her response to the same set of interfaces in a monitored and unmonitored environment, also known as supervised and unsupervised environment. There was a significant difference as seen in table 8., which

	Vigilance	Efficacy	Determination	Frustration	Annoyance	Anxiousness	Confusion	Success	Confidence
Supervised	3.483333	3.483333	3.3	2.783333333	2.35	2.433333333	2.516667	3.383333	3.55
Unsupervised	3.666667	3.783333	3.55	2.183333334	2.06666667	2.016666667	2.35	3.65	3.68333333

Table 8. Average score for Amazon and Ikea being compared for the supervised and unsupervised environment

shows that the scores for the positive emotions such as vigilance, efficacy, determination, success and confidence were greater for an unsupervised environment. Along with this we can see that the scores for the negative emotions such as frustration, anxiousness, annoyance and confusion were also lower for the unsupervised environment. These two trends were in pace with each other and showed little to know deviation from the proposed model as seen in table 1 to table 4. We were able to see that these scores were better because in a supervised environment, the test subjects had a fear of getting judged by the test takers and also felt a need to finish the test faster and hence they tend to make mistakes and felt anxiety. They were not comfortable being monitored continuously and this reflected in the results. Whereas in a more relaxed unsupervised environment. There was no external human contact with the test subject and they performed the tasks and interacted with the interface at their own pace. They felt more relaxed in their own familiar environment and hence their efficiency increased. They were able to perform most tasks and their confidence to perform more tasks also increased along with their determination to complete the test successfully. They were able to do better than how they did in the supervised environment. In conclusion after performing these tests, we have reached a common consensus that, unsupervised interface testing is a better alternative for knowing the views of the general public about any new or existing product. We

just need better remote monitoring systems that can be put into use to gather the needed data.

9. *Conclusion*

The result of the experiments presents an interesting conclusion which are based on a variety of factors, but can be focused on primarily two conditions in our case which are supervised and unsupervised. In case of ease of usage and emotions of users are not just governed by the design of the website but by several other factors. These factors, such as familiarity to the website, intuitive website design play a major role in defining how much a user likes or dislikes a website for ordering or surfing. These results can help various websites in forming better interfaces suitable according to the needs of the user.

These methods of taking the results can also be taken in future as a framework for making the website of finding out the efficiency of the website with respect to the users. Furthermore, a detailed websites making paradigms can be deduced by the help of the proposed framework which can help developers decide what works best for their customers.

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