



Research Article

Factors that influence users in selecting mobile apps- a study on Facebook and Facebook Lite

Dr. Fezeena Khadir^{1*}, Vinila Ravindranath², Radhika Sen³

^{1*} Asst. Professor, Christ Deemed to be University, Bannerghatta Road, Bengaluru, Karnataka, India, Pin code 560076

² Alumnus, National Institute of Fashion Technology, NIFT campus, Kannur, Kerala, India, Pin code 670563

³ Alumnus, National Institute of Fashion Technology, NIFT campus, Kannur, Kerala, India, Pin code 670563

Corresponding Author email: fezeena.khadir@christuniversity.in

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ABSTRACT

The purpose of this study is to understand the factors which influence the users in selecting and continuing to use mobile applications. The study aims to find out how novelty and level of convenience influences the users in making a habit of using applications. The methodology adopted for the study was a mixed method quasi experimental intervention. The sample size for the study was 60 male and female participants pursuing undergraduate and postgraduate course in National Institute of Fashion Technology, Kannur. The current study was conducted on an intervention basis, where one of the two groups selected was to go through a pre and post-test in the beginning and end of the intervention, and the results were compared between both groups and within one group with the help of the t test. The results proved, with constant introduction of novelty and lack of convenience there was an increase in amount of time spent on the app. If there is lack of convenience and no constant introduction of novelty, it resulted in lesser attachment and dependence on the app.

Keywords: *Novelty, Level of convenience, Excessive Dependence, Time spent by users, Attachment towards applications*

1. INTRODUCTION

In the 21st century, mobile phones are an accessory and commodity that affect millions of lives all around the world. This can be due to a host of necessities that covers ranging from ease and productivity to leisure and relaxing. And while there may be various good and bad aspects to it, one cannot deny the fundamental addictive factor they possess, which makes them so important in our daily lives. A by-product of this necessity is social media. Man is a social being and has an intrinsic need to bring a sense of interactivity and socialisation in everything he does; including his commodity.

The present study aims to understand the factors that make social media apps in our everyday mobile phones so usable and addictive, and to discern the levels at which they operate. The sample targeted for this study comprises of both, males and females, in the age range of being teenagers and young adults, which take up a majority of the user base of these apps. One of the most common characteristic of an array of social media apps is level of ease at which they operate, or rather lets the user operate. After the introduction of smartphones and applications, consumers have been able to perform various activities in a far more efficient, flexible and convenient manner (Persaud and Azhar, 2012) which is increasing usage. This is supported by a study by Wang and Wang (2010), according to which the higher Effort Expectancy increases the chances of usage significantly. Effort Expectancy is defined as the level of convenience and ease with which the user can operate the technology. When the complexity of an app decreases, its use is likely to increase. Previous research shows that technology that is driven by simplicity are used more often and by a larger population as it maximizes the efficiency at which a user can operate it. (Agarwal and Prasad, 1999; David, 1989). Convenience of use is a design aspect that is mostly concentrated upon for apps that are in a competitive market like social media. The Technology Acceptance Model proposed by Davis, Baagozzi and Warshaw (1989) asserts that the perceived convenience or perceived ease of use of an app or any other technological

device gives rise to attitude and behaviour acceptance. Convenience is defined by various factors : effort and time optimization, and the lack of a need for extensive efforts by the use, be it cognitive, physical or emotional (Berry, Seiders, and Grewal, 2002). Yoon and Kim (2007) added that ease of execution is also a major factor that defines convenience.

Son (2016) in his study, spoke about how there is an initial tendency exhibited by users when they experience dynamic or new changes in the applications they use. This is said to affect consumer behaviour and purchase behaviour. There are various different updates and changes that are introduced in social media applications on a regular basis, this tends to affect user behaviour and their perception of the application. This is not uncommon in users and their social media usage. This is one of the factors that can be studied, that make an application and its stickiness factor higher. Based on the above findings, both Novelty and Convenience were chosen as the independent variables.

There has been a significant amount of debate on the effects of Social Media Applications and how they are becoming more and more integrated into the daily lives of users. The above factors encourage these different forms of integration, some of which being assessed in the current study is the level of excessive dependence that users feel towards apps that they use. This dependence, in various research papers, is categorised to be as high as addiction. Stone (2014) mentions that dependence on social media is similar to other form of addictions as it deregulates the levels of dopamine in the brain which is the chemical that helps control pleasure and reward centres. Excessive dependence to Social media apps can be viewed as a form of technological addiction where app consumption affects user behaviour at an individual level (Turel et al. 2011).

Various studies suggest the increased necessity of mobile phones and applications where users seems to view mobiles and applications as a necessity and are seemingly reluctant to stay apart from them and need to constantly use and be engaged by their phones (Tian et al., 2009). Attachment to mobile phones and social media is considerably high among college going students In specific, Suki and Suki (2007) found that students seem to be dependent on social networking sites to involve in social participation, maintain interpersonal relationships and network with people in and outside their social systems. This was supported by Peterson and Low (2011) whose study claimed that students use their phones to read emails, open websites and browse social networking sites like Facebook and Twitter. The above finding is a reason for the selection of college students as the sample.

1.1 RESEARCH QUESTIONS

Is there any relationship between the convenience of an app and the level of attachment and dependence that a user feels towards the app?

Is there any relationship between the "introductions of novelty, periodically, in an app and the level of attachment and dependence that a user feels towards the app?

Is there any cause-effect relationship between convenience and introduced novelty on the amount of time spent by the user?

2. LITERATURE REVIEW

The purpose of the study is to understand the different factors which influence the use and continuance of social media applications.

One of the factors considered in the study is convenience. When the user is convenient with any particular technology then the usage also increases in daily life (Chang, Yan and Tseng, 2012).

Convenience mainly affects user acceptance, positive attitude and continuation further(Chang, Yan and Tseng, 2012). Convenience comes into play when technology can save the time and lower the the burden of a user. It can be considered as time taken by a technology to execute a particular task and its ease of use (Berry, Seiders and Grewal, 2002). The age of the sample considered was 16-22. A study on Mobile technology and English learning for college students revealed that the more the easier technology that was

being provided to the users, the more convenient it was perceived by the users. It also explained that if the technology was more convenient, then it positively affects the attitude of the user towards the technology (Chang, Yan and Tseng, 2012).

Another study focused mainly on students who were given a project in a particular course to work on with the help of social media as tools, consisted of applications like Facebook, Drop box, Google Drive, Google Doc, Twitter, Email etc. The students were divided into different teams for this particular work. This study consisted of a total sample size of 58 students out of which 26 were male 32 were female. The study revealed that convenient access, convenient use and convenience to collaborate privately were the reasons why students adopted these applications over other existing tools. The main finding of the study was that Facebook was the most used social media tool by the students throughout (Jang, 2014).

There have been studies which have examined what are the factors which influence a user towards continuous usage of social media applications. The study revealed that mobile social apps had exponentially changed the way people communicate. Causal research was adopted for the study. Continuous usage was driven by satisfaction and habitual use. A study conducted previously on suggests that more the effort of expectancy more is the chances of using that particular application. Effort expectancy is defined as the degree of ease in the use of technology. The lesser the complexity the more will be chances users use the application (Kang, 2014). The data collection of the study was conducted through social networking sites (SNSs) from 1 May to 31 June, 2011. SNS's, the most prevalent online human networks today, encompass the largest number of users with shared interests, friends, and communities. The study also showed that entertainment was a significant predictor of continuance intention. This finding indicates that mobile apps are used when people want to escape boredom or engage in leisurely activities.

Another study named "User's Behaviour Towards Social Media: A Study In Gujarat" shows that there is huge opportunity available for research scholar's to carry out research on topics like factors which drives people towards social media, social media marketing, and implication of social networking sites on purchase decisions, use of social media for marketing, consumerism, academics and other fields (Rajani, 2017). Their results show that 20-30 is the age group which comprises of major social media users. Majority of respondents were using social media for more than 5 years of time and were used to spending on an average 2 to 5 hours per week on social media. Feedback and content sharing, entertainment and socializing and networking were the main purposes for using social media. Irfan et al. (2017) study the impact of social media on education tourism and proved that social media played an important role to enhance education tourism. Social media and other latest technology has drastically changed the interpersonal communication skills of youth (Bibi et al., 2018). In another study Irfan et al., (2018) established the impact of social media to enhance university ranking. Similarly, they did a systematic literature on social media and public value and proved that social media is an important tool to create public value.

There are also other studies done on understanding the usage pattern of mobile phone and its excessive dependence (Liu, N., Kuan, 2018). This study shows that almost 20 billion people own a smartphone and this number has been drastically increasing. In 2011, more than 10 billion applications were being downloaded from the iOS and the number was even larger when compared with downloads from other platforms. This study was mainly focused on understanding users' mobile phone usage pattern. Studies conducted earlier showed that social network apps were believed to cause an addictive behaviour among users.

A study which was conducted during 2016 which identified that social network addiction was a major health threat and that more than one-third of the world's population had access to social media through their mobile devices (Eijnden et al., 2016). The findings which the study focused on were that when students and working adults had more leisure time over the weekend, their usage was more which explained that they had excessive dependence. Similarly phones being used more often during day, night or in the midnight was also an indicator for phone dependence.

There have been studies which have already established a link that Internet addicts suffered from severe social, professional and affective impairment and disruption (Young, 1998). One of the most important findings of the theory was that addicts, who had full knowledge of the implications which they had to face, calculated the expected benefits against costs (Stigler and Becker, 1977).

2.1 STATEMENTS OF HYPOTHESES

H1. There is an increase in the amount of time spent on an app if there is a constant introduction of novelty and a lack of convenience in the services provided by the app

H2. There is a decrease in the amount of attachment to an app if there is a lack of convenience and no constant introduction of novelty

H3. There is a decrease in the amount of dependence on an app if there is a lack of constant introduction of novelty and a lack of convenience

3. METHODOLOGY

3.1. RESEARCH DESIGN

The present study is a mixed method study, which employs novelty or newness (the quality of introducing something new, original, or unusual in the already existent) and the level of convenience as the independent variables and excessive dependence, attachment and the time spent by the user as its dependent variables. The study uses a pre-test, post-test quasi-experimental design. It's a between group design that aims to observe the difference between the levels of dependence, attachment and time spent in both the groups. It is also a within group design employed to observe the change in the aforementioned variables after the intervention is conducted.

3.2 SAMPLE

The sample includes a group of sixty students pursuing undergraduate and postgraduate courses in college, subdivided into two groups of thirty people each male and female.

3.3. Inclusion Criteria:

- Age range of subjects: 18-28 years
- Gender: Male and Female
- Students studying in National Institute of Fashion Technology, Kannur
- Students who are regular users of Facebook

3.4. Exclusion criteria:

- Students who do not have an account on the social networking site - Facebook.
- Students who were unwilling to participate in all 5 days.

3.5 Questionnaire :

The Questionnaire was formulated using the help of Media and Technology Usage and Attitudes Scale (MTUAS) constructed by Rosen(2013) which measured various aspects of media and technology usage and its corresponding attitudes in different sections, one of the sections being Facebook usage. It had also taken a few pointers from the Social Media Disorder Scale that was modified by Regina J.J.M. van den Eijnden, Jeroen S. Lemmens and Patti M. Valkenburg (2016). The current scale consists of 15 questions, some of which are dichotomous and most of which follow the format of a Likert Scale.

3.6 PROCEDURE

The self-administered questionnaire was created and then prepared for data collection. Two sets of questionnaires were prepared and both included the demographic data sheet and questionnaire. Students from

across all years of bachelor and masters classes were contacted out of which 60 were shortlisted for both the focus groups. The first focus group was made aware that they had to participate in a pre as well as a post-test where they give their initial response to the downloaded mobile application Facebook Lite; and where they give another response at the end of 4 days about the same. The students who agreed were asked to download the mobile application and given the first set of questionnaires. In the second focus group, students were simply asked to fill the questionnaire on how they use Facebook on an everyday basis. After the collection of the first set of questionnaires, the data analysis of the group of participants using Facebook was computed. After the completion of 4 days, the focus group using Facebook Lite were contacted and asked to fill the post test questionnaire.

3.7 STATISTICAL ANALYSIS OF THE DATA:

The means of the pre and post intervention scores were computed and a paired – t test was conducted on students of Nift Kannur, both male and female between the age of 18 - 28 years to check if there was a significant difference in the levels of dependence, attachment and time spent individually, and as a whole. An independent sample - t test was conducted between the group that used Facebook and the group that used Facebook Lite to see if there was a significant difference between the two.

4. RESULTS

Table 1: Paired samples statistics of the pre and post intervention scores of the sample that used Facebook Lite, on the whole and for individual variables

		Mean	Standard Deviation	Difference	t-value	Sig.
Total	Pre Test	30.700	6.2179	.601	.529***	.601
	Post Test	30.100				
Attachment	Pre Test	20.767	5.1337	.751	.320***	.927
	Post Test	20.467				
Dependence	Pre Test	8.367	1.9815	.855	.184***	.760
	Post Test	8.300				
Time Spent	Pre Test	1.533	.5074	.161	-1.439***	.712
	Post Test	1.667				

*** $p < 0.05$

The results exhibited by Table 1 show that there exists no difference in the levels of attachment, dependence and time spent as a whole pre and post intervention, however, and the difference is not significant. The results of the pre intervention are greater in value than the post intervention for the total scores, dependence and attachment. However, the value of the post intervention scores are higher when compared to the pre intervention scores for Time Spent. There is only a marginal difference in the levels Attachment, Dependence and Time Spent in all areas.

Figure 1a & b: Distribution of responses across all participants and standard deviation pre and post intervention. (x- axis: position of the mean and y-axis: serial number of the participant)

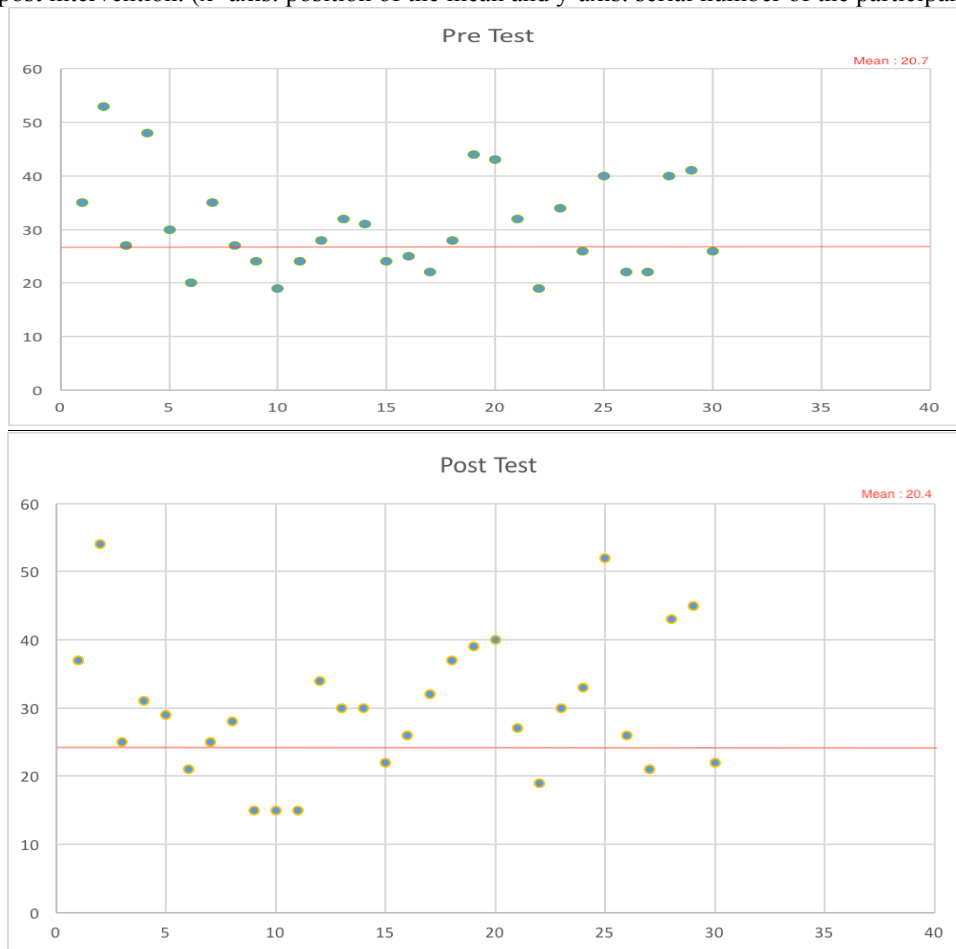
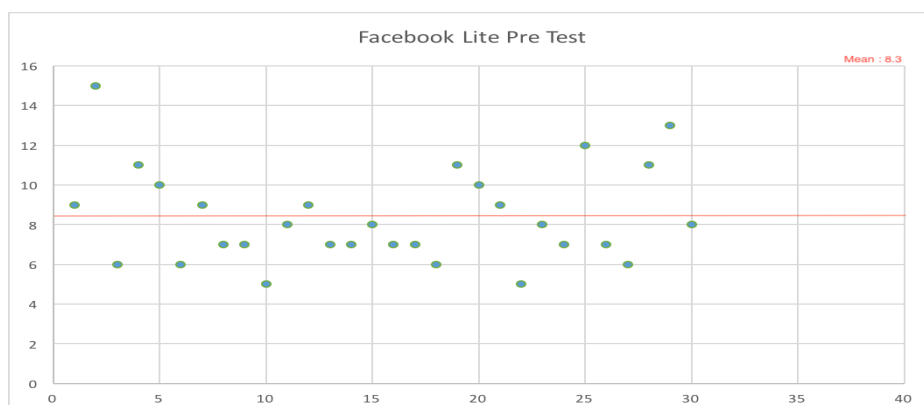


Figure 1a and b shows a drop in the total mean, however the combined number of users exhibiting high levels of time spent, attachment and dependence does not show any positive difference

Figure 1c & d: Distribution of responses in the levels of dependence across all participants and standard deviation pre and post intervention



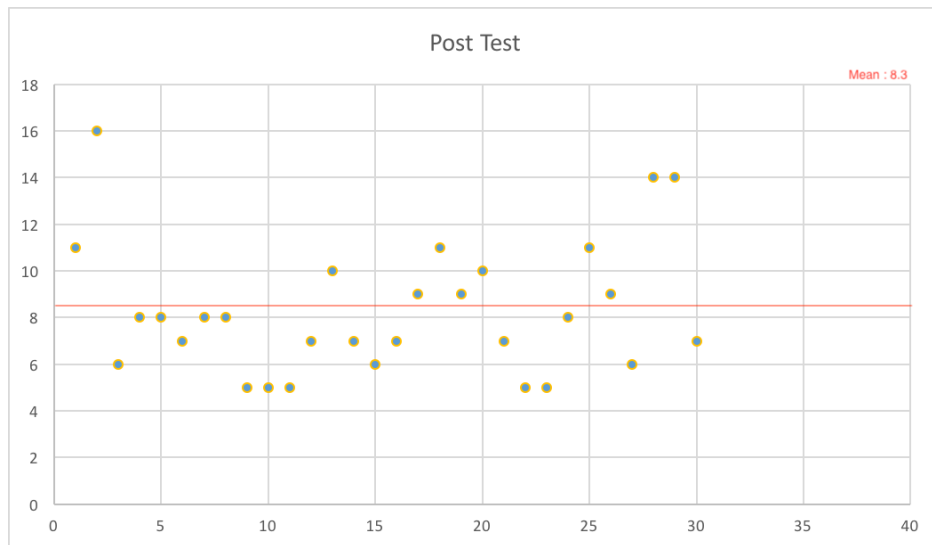


Figure 1c and d exhibits a significant decrease in value and number of participants depending over the mobile application post intervention proving H3

(x- axis is the position of the mean and y-axis is the serial number of the participant)

Figure 1e & f: Distribution of responses in the levels of attachment across all participants and standard deviation pre and post intervention

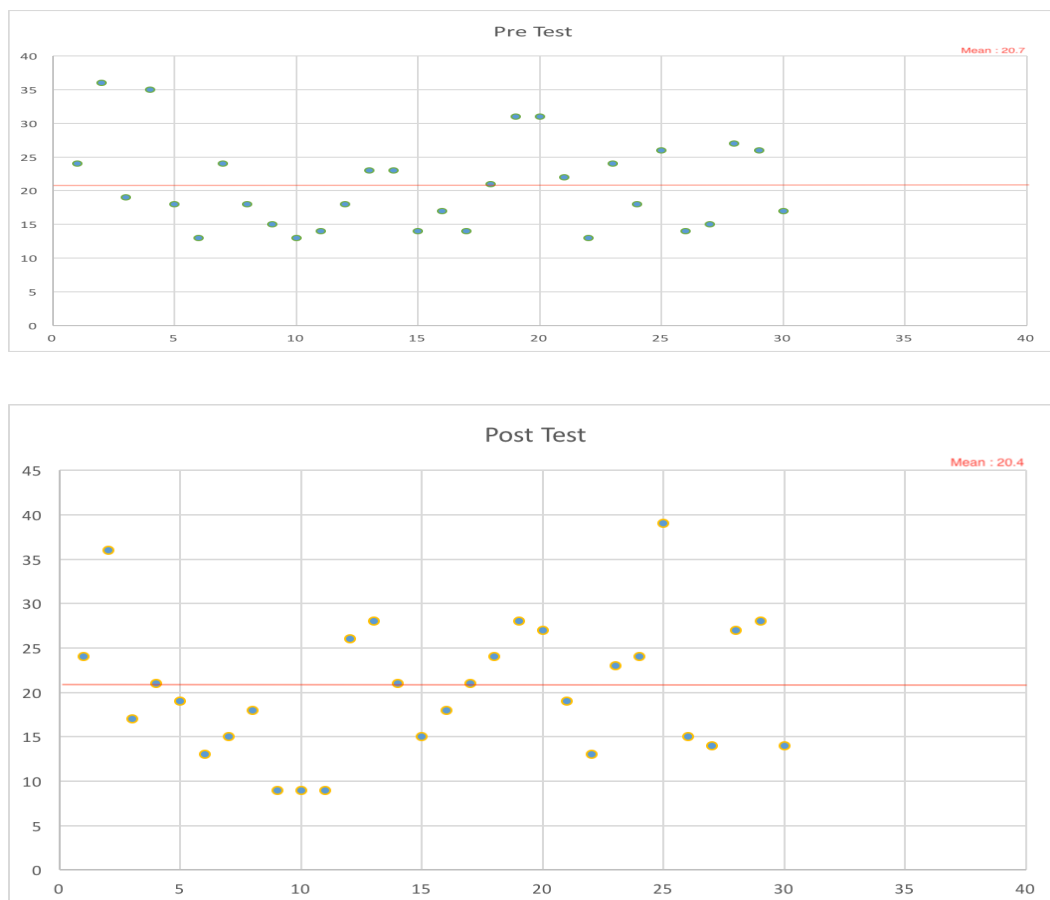


Figure 1e and f exhibits a lack of significant decrease in the levels of attachment in users, partially disproving H2

(x- axis is the position of the mean and y-axis is the serial number of the participant)

Figure 1g & h: Distribution of responses in the levels of time spent across all participants and standard deviation pre and post intervention

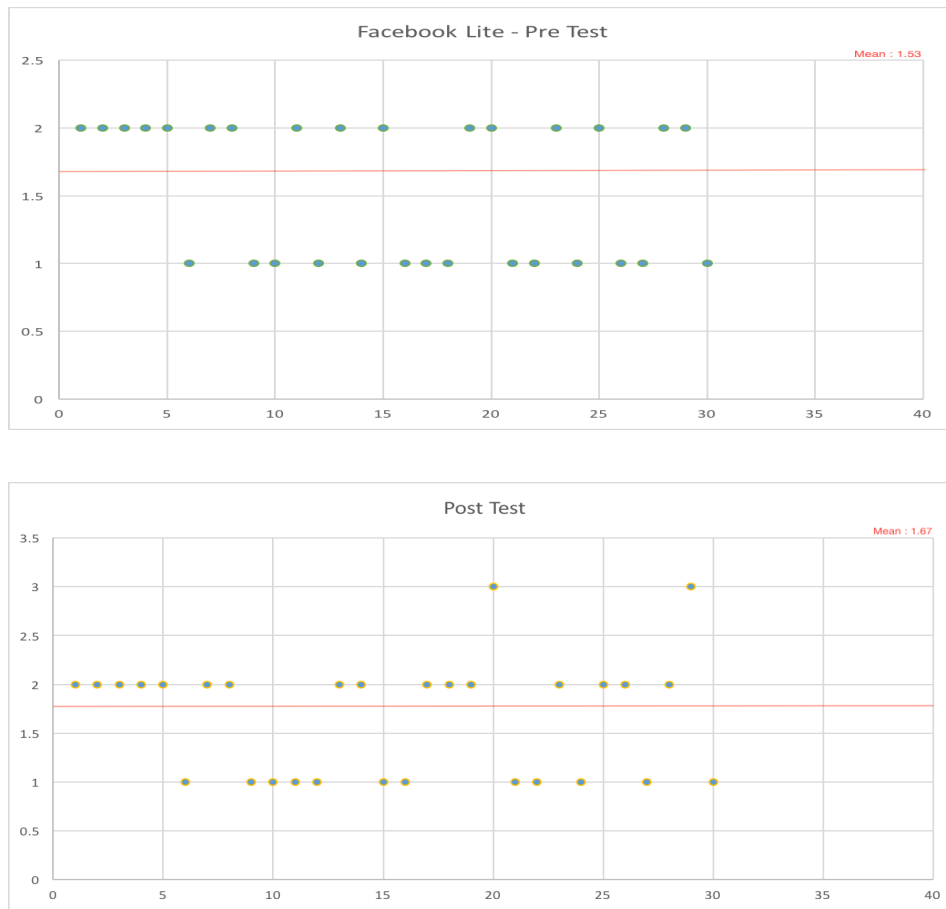


Figure 1g and h exhibits the difference in time spent, partially disproving H1 due to an increase in time spent rather than a decrease due to the lack of convenience.

(x- axis is the position of the mean and y-axis is the serial number of the participant)

Table 2: Paired samples statistics of the Facebook original app users and post Facebook Lite intervention user scores, on the whole

		Mean	Standard Deviation	Difference	t-value	Sig.
Total	Facebook	30.400	13.4655	.904	.122	.904
	Facebook Lite	30.100				

***p>0.05

The results exhibited in Table 2 show that there exists a difference in the levels of attachment, dependence and time spent as a whole in the user scores of Facebook and Facebook Lite, however, the difference is not significant. The results of the pre intervention are greater in value than the post intervention for the total scores.

Figure 2a & 2b: Distribution of responses across all participants and standard deviation in the scores of Facebook and Facebook Lite users.

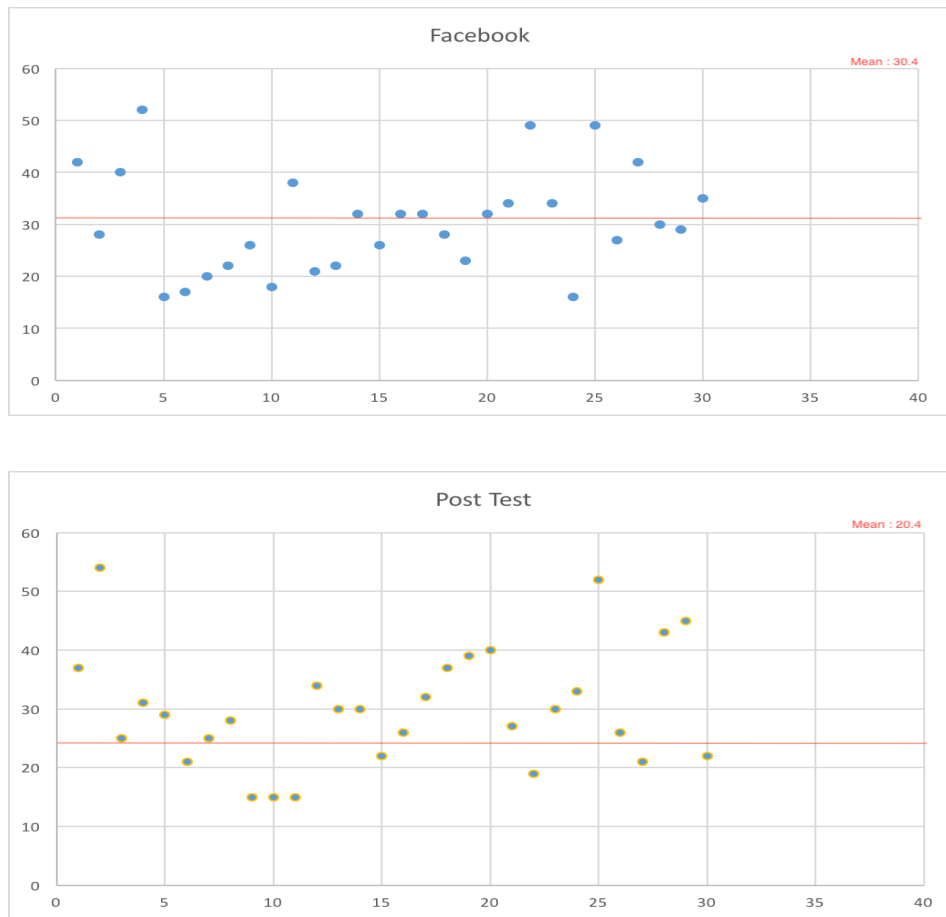


Figure 2a and 2b shows a drop in the total mean and also in the combined number of users exhibiting high levels of time spent, attachment and dependence partially proving H1, H2 and H3.

(x- axis is the position of the mean and y-axis is the serial number of the participant)

Table 3: Paired samples statistics of the Facebook original app users and post Facebook Lite intervention user scores, showing individual variables

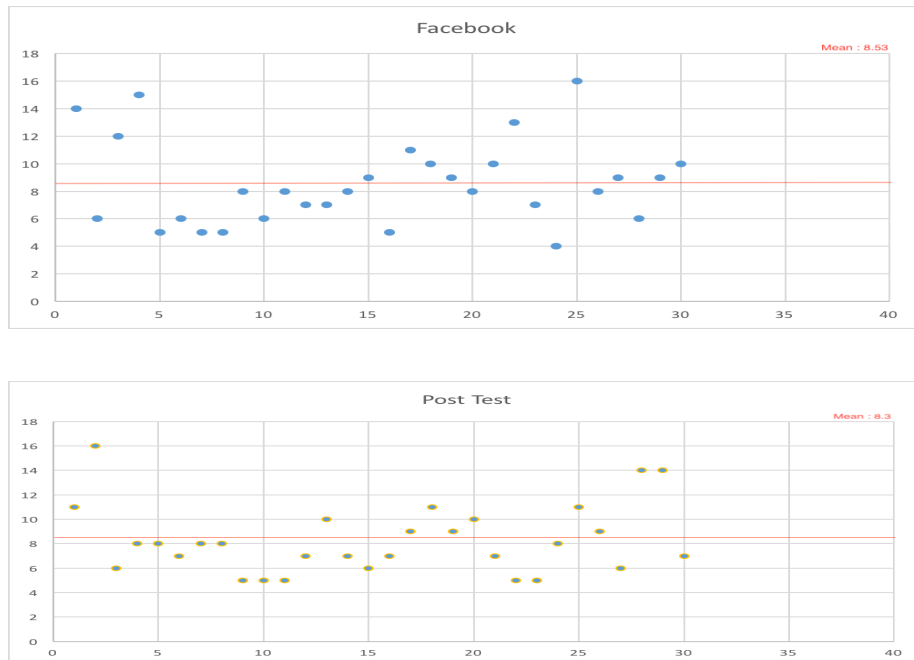
		Mean	Standard Deviation	Difference	t-value	Sig.
Attachment	Facebook	20.300	9.8963	.927	-.092***	.751
	Facebook Lite	20.467				
Dependence	Facebook	8.533	4.1413	.760	.309***	.855
	Facebook Lite	8.300				
Time Spent	Facebook	1.600	.9803	.712	-3.72***	.161
	Facebook Lite	1.667				

*** $p < 0.05$

The results exhibited in Table 3 show that there exists a difference in the levels of attachment, dependence and time spent as individual variables in the user scores of Facebook and Facebook Lite, however, the difference is not significant. The results of the Facebook are greater in mean value than the Facebook Lite

users for the total scores for Dependence as a variable, but not the same for Attachment and Time Spent, where the mean value of Facebook Lite is higher.

Figure 3a & 3b: Distribution of responses in the levels of dependence across all participants and standard deviation in the scores of Facebook and Facebook Lite users



(x- axis is the position of the mean and y-axis is the serial number of the participant)

Figure 3a and 3b shows that there is reduce in the average response scores of the participants and decreased levels of dependence in the intervened sample proving H3.

Figure 3c & 3d: Distribution of responses in the levels of attachment and standard deviation in the scores of Facebook and Facebook Lite users

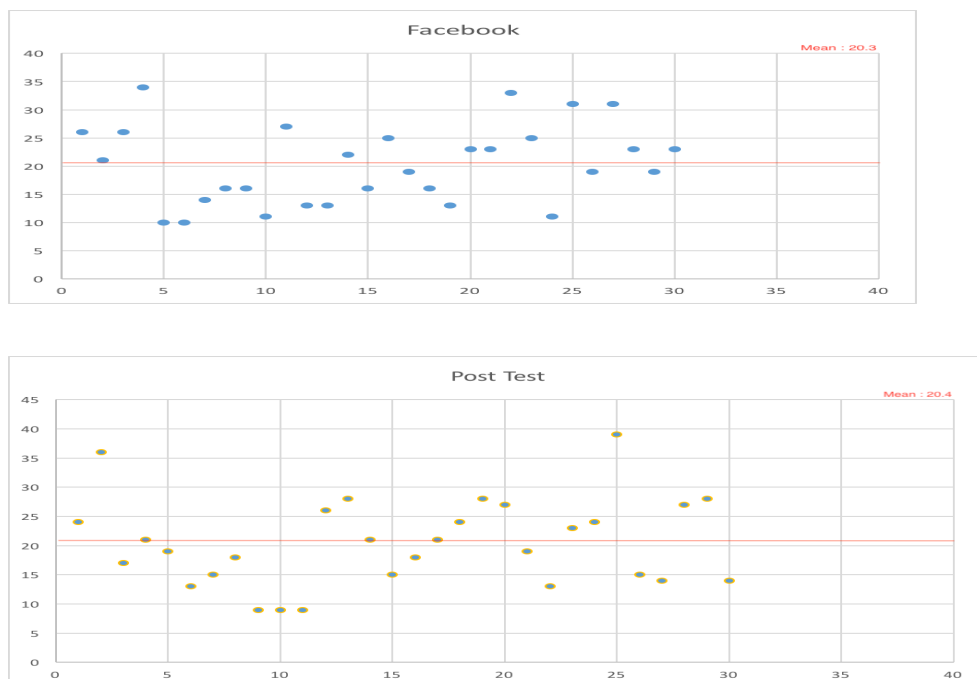


Figure 3c and 3d exhibits a lack of significant decrease in the levels of attachment in users, thus disproving H2

(x- axis is the position of the mean and y-axis is the serial number of the participant)

Figure 3e & 3f: Distribution of responses in the levels of time spent across all participants and standard deviation in the scores of Facebook and Facebook Lite users

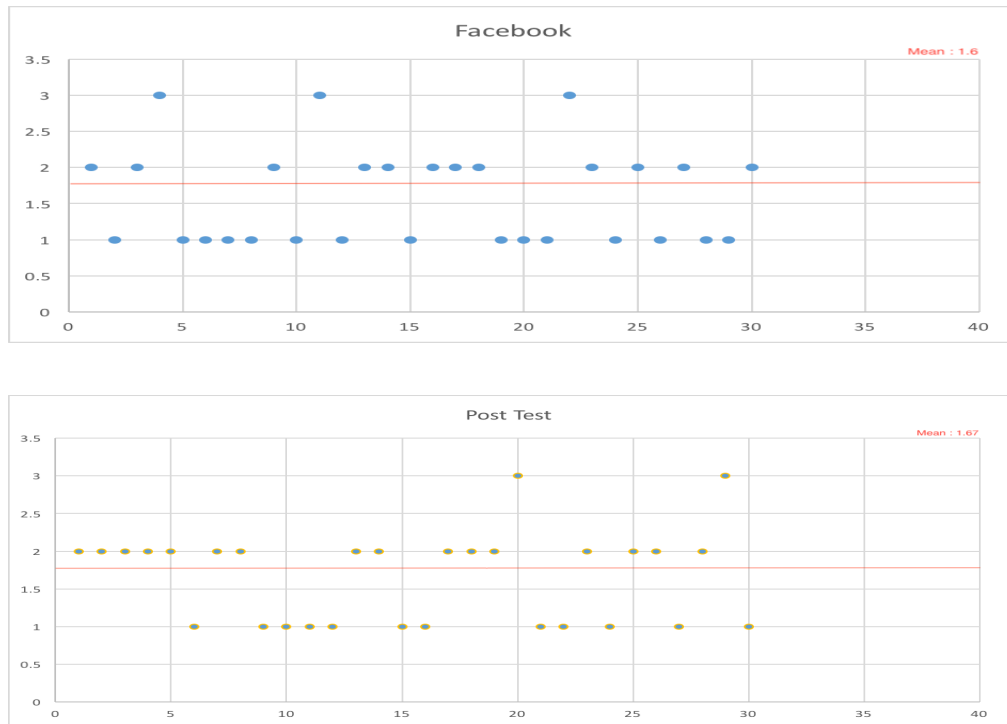


Figure 3e and 3f exhibits the difference in time spent, completely disproving H1 due to an increase in time spent rather than a decrease despite the lack of convenience.

(x- axis is the position of the mean and y-axis is the serial number of the participant)

4.1 HYPOTHESIS TESTING RESULTS

S.No	Hypothesis	Results
H1	There is a increase in the amount of time spent on an app if there is a constant introduction of novelty and a lack of convenience	Disproved
H2	There is a decrease in the amount of attachment to an app if there is a lack of convenience and no constant introduction of novelty	Disproved
H3	There is a decrease in the amount of dependence on an app if there is a lack of constant introduction of novelty and a lack of convenience	Approved

5. DISCUSSION

The study focuses on finding out how the introduction of novelty and the level of convenience can have an impact on factors such as the level of dependence, attachment and time spent by the user on a mobile application. The mobile applications used for comparison were Facebook and Facebook Lite. While Facebook has various different operations that make the application easier to use, its counterpart, Facebook

Lite lacks the same level of convenience in which a user can operate. The average level of attachment ($M=20.767$) the participants showed towards Facebook Lite during the Pre-test was not significantly higher when compared to the level of attachment shown ($M=20.467$) after the Post-test. The level of dependence ($M=8.367$) the users exhibited during Facebook Lite pre-test was comparatively higher than the post test result ($M=8.3$). The amount of time spent on each application shows that users were spending more time on Facebook Lite according to the pre-test result ($M=1.53$) when compared to post test result ($M=1.66$). The results imply that the participants exhibited lower levels of dependence, and similar levels of attachment on Facebook Lite whereas the time spent was significantly higher.

The result shows that the users were not comfortable using Facebook Lite which affected how much they depended on the mobile application. Previous researches have proven that, the decrease in complexity of technology was directly proportional to the number of users using it because of the convenience in usability. It also meant that users prefer simple technology with maximised efficiency (Agarwal and Prasad, 1999; Davis et al., 1989). This explains the decrease in level of dependence.

The study shows that there was no significant change between the participants' usage of Facebook and Facebook Lite. This means that the number of users for the Facebook application had reduced mainly due to lack of convenience which consequently resulted in lack of dependence on the application. The level of attachment did not show significant differences between the participants. This shows how dependence on an application can decrease in a short amount of time despite the level of attention staying the same.

6. IMPLICATIONS

The research can be used by social media mobile application developers as a base for developing new ideas and concepts. It can also give them an additional benefit to understand and analyse the current problems that cause the decline in the usage of an application and its demand. The results will help mobile application developers to develop better applications in the light of existing problems and by utilising user behaviour and perception as a tool to improve user experiences and longevity.

7. LIMITATIONS

The study mainly comprised three limitations. Firstly, the availability of respondents for Facebook Lite was very limited. This was mainly because users were not aware of the application as compared to other, more commonly used apps. Secondly, the time utilised for the intervention was sparse, and not enough for an average user to get accustomed to the mobile application - Facebook Lite. The test can be unreliable due to the limited amount of time that it had been conducted in. Finally, the users who used the mobile application - Facebook, were also limited to find; as Facebook was not commonly used by the prescribed age group due to the rising popularity of other apps such as Instagram and Snapchat. The usage of Facebook as an app had already been on a decline among users which posed as a major factor affecting the final results.

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