Study of Mobile Usage Among College Students In Coimbatore

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Abstract- *The mobile apps technologies are widespread all over the world in the recent year. Currently 90.9% of people in the developed countries and 32.4% of people in the developing countries own a smart phone. Over the last decade, the smart phone has evolved in every sector, presenting much convenience to all areas, including higher education. According to Brown etal, several features give way to smart phone, but it is the mobile apps which is the most important feature. Mobile applications offer a lot of advantages but it has also negative aspects. In reply to a question about Smartphone's obsession, one out of five students said that they felt craving to their smart phones. The study was conducted among a sample of 300 students belonging to same college. The naïve bayes classifier is applied to the collected model and the accuracy of 80.0% is achieved. The result shows that, a significant percentage of students use the smart phone for more than 5 hours per day, mostly they use, the social media and entertainment apps in their smart phones. Most Popular applications are games, online shopping, entertainment, movies, etc. They acknowledge that smart phones provide security when they are in new premises, but state that late night discourse does not disturb concentration in the class. About 40 percent of students admit that they would prefer talking to friends on their smart phones rather than parents when they are at home. However, they do not prefer to engage in smart phone conversations when they are in a low mood. The study also highlights the significant of app usage among the students.*

Keywords- Smart phones, App Usage, Social Needs, College Students

I. INTRODUCTION

The use of smart phone has redefined the user experience in many facets of everyday life. Also, mobile devices have created a number of new business opportunities and services [1]. As the digital ecosystem and mobile apps continue to develop, the effect of innovation will be sensed. Increase in the mobile innovations, caused by new technologies and business models, would result in the greater linkage between digital and physical world [2]. The Present era of rapid stride in the advancement, inventions initiative in the field of information and Technology (IT) has resulted in changing face of life-socially, politically economically and culturally[4]. They are here to stay. Mitchel H. Lewise, the New York City-based John Ganze Coneey Center, at Seesamee Workshop, wrote in a statement characterizing the release of the report [5]. ―It is no longer a question of whether we should use these devices to support learning, but how and when to use them. Smart phone usage has mobilized the human interaction in all extent by supporting mobile concert. As collaboration is pivotal to learning in present educational environment, smart phone usage has tremendous potential in supporting and bettering education and its delivery [6]. Given that smart phone usage for education is a new sensation that is gaining popularity, the values of using mobile apps to support education need to be further scrutinized and better understood. In this study, we used the Value-Focused Thinking method to interview students and mentors to identify the integrity of education that are enabled by smart phone usage [7]. This integrity is represented in the form of a means-ends objective network that not only captures the integrity of education, facilitate by mobile apps but also illustrate the relationships between these integrity [8]. The means-ends objective network derived from this study can serve as an intellectual foundation for future studies and serve useful guidelines to practitioners for implementation of mobile technology in education.

Information Technology (IT) is a critical resource for creating organizational value [9]. It also has the capability to transform the nature of products, processes, companies, industries and even it competetes itself. Mobile apps , which can support computing using portable devices through wireless networks, has emerged as the next wave in IT revolution[10]. Mobile technology includes technological infrastructure for connectivity such as 4G, General Packet Radio Service (GPRS), Bluetooth, and Wireless Application Protocol (WAP) as well as mobile information appliances such as smart phones, PDA's and laptops [9]. By stretching computing and the Internet into the wireless channel, mobile apps technology allows users to have anywhere, anytime access to applications and information, which provides greater resilience in collaboration, communication and information sharing [11].

Mobile application is gaining importance and popularity in education (examples of applications of mobile application in education include mobile access to organization intranet), payment apps and banking services, and electronic procurement application system based on WAP using mobile phones and laptops[12]. In the past decades, students and educators in higher education have relished the benefits of wired technology [13]. However, wired technology provides limited access for usage due to a lack of mobility [14]. In an alternate, wiredtechnologies cannot offer anywhere, anytime accessibility, a benefit now exhibit by mobile wireless technologies [16]. The usage of mobile wireless technologies can overcome the limitations of educational flexibility with wired technology. With the recognition of mobility, mobile wireless technologies benefit improves efficiency and effectiveness in teaching and learning [17]. The organization structure of this study provides the detailed analysis of mobile applications, using evolutionary algorithms, traditional computation algorithms, and WEKA tool utilization, description of methodology, the comparison of these designs are carried out.

II. LITERATURE REVIEW

Chand, Tara (2017) in his book Education Technology contends that the introduction of modern technology in education serves us a catalyst for a more inclusive and practical knowledge. Besides technology helps in bringing efficiency, better excess to information and leads to a more interactive method of learning which go along may in improving over education system[6].

Mohanty, Jagannaath (2015) in his book Education Technology contends that in the age of science and increasing in the inter course between educational technology we cannot whack to neglect the use of technology in the area of education. He further added that Educational Technology has not only emerged as a prospective subject but also a potential instrument for bringing about desirable changes both qualitative and quantitative in education arena1[15].

Das, R.C. (2013) in his work Educational Technology attempts to find out that the technique of modern information technology has resulted in efficiency and better environment for teaching and learning. It also spells out that through media education can be made accessible to people in the remote areas thereby helping the part of education[7] . Bhatt, B.D. and Prakash, Ravi contends in their Modern Encyclopeadia of Education Technology found that education Technology has become a key tool to enhance knowledge and added supplement to the text book. It's also highlighting that technology help in effective learning both for the students.

Bansall, S.K. (2016) Information Technology and Globalization, give us an insight look into technology in changing the traditional methods of imparting knowledge [3]. The book stresses that the growth of globalization couple with the rapid development of communication technology provides highly information and collective resources to the student's community. It also notes that the modern life is totally dependent upon technology [19]. The book further contends technology help in social mobility and in building students consciousness of the reality of this world Kishore [20], Nanda Educational Technology wrote that Education and technology go hand in hand. It also speak of the needs to give update with the latest technology if students and teachers are to be successful for the purpose, its suggest a thorough and inclusive education process were both the traditional way of teaching and learning together with the technique of technology co-exist.

III. METHODOLOGY

Methodology is the most significant part in construction towards the quality enrichment and drawing of scientific and conclusion of any study. In order to conduct some research, there are many methods and rulesare followed. However, it is the sort of the problem under investigation, which determines the adoption of a particular approach that is the most appropriate one. The present chapter primarily deals with the method and procedure.The main aim of this study is to find the strategic and organizational impact of smart phone usage where few studies exist, case study approach is well–satisfied for this study. Methodology with effective procedure is one of the most significant method for conducting the investigation for any research work. This chapter gives the details of the sources of data such as the primary and secondary sources, tools used and technologies of data collection used for the present study.In the present study descriptive method has been followed.It is a small invitation of a population selected for analysis and observation andit is a collection consisting a part of the objects or individual of the population. By observing the characteristics of the fragment, one can makes inferences about.

(a)Tools used: The Tool used for the study is weka datamining tool and comprises of a self prepared questionnaire containing about 10 questions. The respondents give their answers in objectives with choices. For the collection of data the investigator went to the colleges -and seeked the permission of the Head of the respective Departments for the study. The filled in questionnaires from the students and was analysed accordingly.

(b)Naive Bayes Approach: Naïve Bayes data mining classifier approach has been applied in this paper,in which it invent an optimal prediction model using minimum training set to conclude the result. Each algorithm requires submission of statistics in a specified format. The conversion of raw statistics into machine understandable format is called preprocessing. The data preparation phase comprises all activities to construct the last dataset from the first raw data. These raw data can be stored in several formats including text,excel or other database types of files. Then the raw data is changed into data sets with a few appropriate characteristics. 10-fold cross-validation was applied for experiments and ten random iterations were drawn to check the performance of the classifier. In each iteration, confusion matrix was prepared and statistical measures were calculated as well. For more precise understanding and decision making, different charts and graphs were drawn.

IV. RESULT AND DISCUSSION

Proposed methodology is applied to the dataset and respondents WEKA tool evaluation performance results are described in the below table 1.from the table naïve bayes accuracy is 80% correctly classified to given respondents dataset. table 2 described the detail description based on TP Rate, FP Rate, Precision, Recall, F-Measure, MCC, ROC Area, and PRC Area based   to find the weighted average value on mobile app usage.

Table 1: classification result

	Results
Correctly Classified Instances	240 (80.00 0%)
Incorrectly Classified Instances	60 (20.000 %)
Kappa statistic	0.2794
Mean absolute error	0.3093
Root mean squared error	0.4361
Relative absolute error	81.2452 %
Root relative squared error	98.9976 %
Total Number of Instances	300

Table 2: Detailed Accuracy result

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area
	0.833	0.056	0.833	0.833	0.833	0.778	0.926	0.703
	0.333	0.278	0.286	0.333	0.308	0.053	0.722	0.390
	0.400	0.211	0.333	0.400	0.364	0.178	0.716	0.499
	0.286	0.176	0.400	0.286	0.333	0.122	0.454	0.491
Weighted Avg.	0.458	0.179	0.466	0.458	0.458	0.280	0.694	0.520
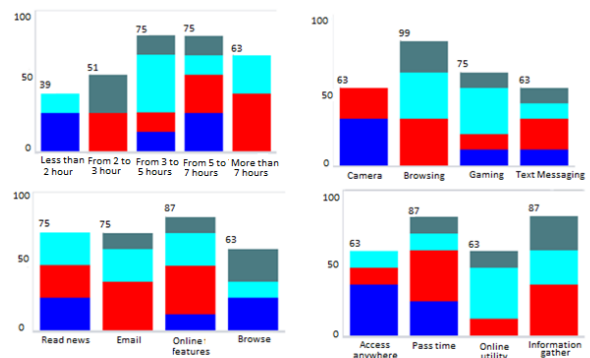
Figure1 (a): mobile phone on average in a day (using apps) (b) favorites feature (c): Primary purpose for using apps on your mobile phone, (d): main benefits of using apps on your mobile phone

Initially decide the following 4 categorized based on mobile users, figure1 (a), x axis represents the average time spend on apps in a day such as less than 2 hour, from 2 hour to 3 hour, from 3 hour to 5 hour, from 5 hour to 7 hour, more than 7 hour and y axis represents number of samples used in the survey.Data shows that, among 300 student 25% (75) are using the apps from 3 to 5 hours, 25% (75) are using the apps from 5 to 7 hours, 21% (63) are using the apps for more than 7 hours, 17% (51) are using the apps from 2 hour to 3 hours and rest of the students 13% (39) are using the app for less than 2 hours. The result shows that the average usage of apps varies from 1 hours to 3 hours among the students. figure 1(b) graph, x axis represents the various favorite features of apps such as camera, browsing, gaming, text messaging and y axis represents number of samples used in the survey. Data shows that, among 300 student 21% (63) are selected camera as the favorite features, 33% (99) are selected browsing as the favorite features, 25% (75) are selected gaming as the favorite features, and 21% (63) are selected text messaging as the favorite features. The result shows that the most favorite features among the college student are browsing features. Figure 1(c) graph, x axis represents the primary purpose for using apps such as read news, email, online features, browse and y axis represents number of samples used in the survey. Data shows that, among 300 student 25% (75) are selected reading news as primary purpose, 25% (75) are selected accessing mail as primary purpose, 29% (87) are selected online features as primary purpose, and 21% (63) are selected browsing as the primary purpose. The result shows that the primary purpose for using apps among the college student is accessing the online features. figure 1(d) graph, x axis represents the main benefits of using apps such as access anywhere, passing time, online utility, information gather and y axis represents number of samples used in the survey. Data shows that, among 300 student 21% (63) are selected access anywhere as main benefits of using apps, 29% (87) are selected accessing mail as primary purpose, 29% (87) are selected online features as primary purpose, and 21% (63) are selected browsing as the primary purpose. The result shows

that the main benefits of using apps among the college student are passing time and information gathers.

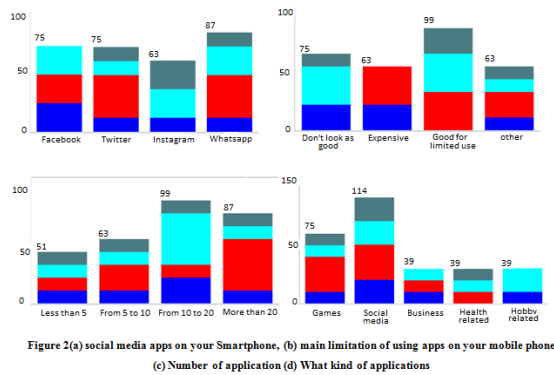most used apps. The result shows that the social media apps are the most used apps among the college students.

Figure 2(a) social media apps on your Smartphone, (b) main limitation of using apps on your mobile phone
(c) Number of application (d) What kind of applications

Figure 3 (a) Most interested application (b) Most used application

figure 2(a) graph, x axis represents the most preferred social media apps used in the smartphone such as facebook, twitter, instagram, whatsapp and y axis represents number of samples used in the survey. Data shows that, among 300 student 25% (75) are selected facebook as most used app, 25% (75) are selected twitter as most used app, 21% (63) are selected instagram as most used app, and 29% (87) are selected whatsapp as most used app. The result shows that the most used social media apps among the college student is whatsapp. figure 2(b)graph, x axis represents the limitations of using apps such as do not look as good, expensive, good for limited use, other reasons and y axis represents number of samples used in the survey. Data shows that, among 300 student 25% (75) are selected do not look as good as main limitation of using app, 21% (63) are selected apps are expensive as main limitation of using app, 33% (99) are selected good for limited use as main limitation of using app, and 21% (63) are selected other reasons. The result shows that the main limitation of using apps on mobile is good for limited use. figure 2(c)graph, x axis represents the number of apps installed in the mobile such less than 5, from 5 to 10, from 10 to 20, more than 20 and y axis represents number of samples used in the survey. Data shows that, among 300 student 17% (51) are selected number apps in their mobile is less than 5, 21% (63) are selected number apps in their mobile as from 5 to 10, 33% (99) are selected number apps in their mobile as from 10 to 20, and 29% (87) are selected number apps in their mobile is more than 20. The result shows that the number of apps on mobile is from 10 to 20.figure 2(d)graph, x axis represents kind of apps used most in the mobile such games, social media, business, health related, hobby related and y axis represents number of samples used in the survey. Data shows that, among 300 student 25% (75) are selected games apps as most used apps, 38% (114) are selected social media apps as most used apps, 13% (39) are selected business apps as most used apps, 13% (39) are selected health related apps as most used apps, and 13% (39) are selected hobby related apps as
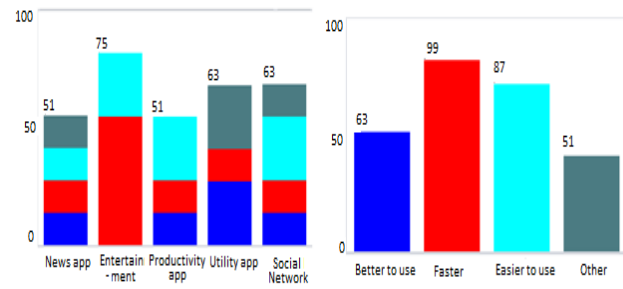
figure 3(a)graph, x axis represents kind of apps likes to see more in the mobile such entertainment, news app, productivity app, utility app, social network and y axis represents number of samples used in the survey. Data shows that, among 300 student 17% (51) are selected news apps as likes to see more, 25% (75) are selected entertainment apps as likes to see more, 17% (51) are selected productivity apps as likes to see more, 21% (63) are selected utility apps as likes to see more, and 21% (63) are selected social network apps as likes to see more. The result shows that the entertainment app is like to see more among the college students. figure 3(b)graph, x axis represents the reasons for apps usage over webpage's in the mobile such as better to use, faster, easier to use, other and y axis represents number of samples used in the survey. Data shows that, among 300 student 21% (63) are selected better to use as advantages, 33% (99) are selected faster to use as advantages, 29% (87) are selected easier to use as advantages, and 17% (51) are selected other reason. The result shows that the mobile apps are faster comparing to the webpages.

V. CONCLUSION

This study provides practical insights for the field of computer information systems by exploring smart phone usage and the effects of smartphones on college students. The ten research questions in this exploratory study found the following statistics and some of them were considered to be significant. Overall, the results of this study should be used to tell the information systems community and people working in education because student's study habits are constantly changing due to the most owning a smartphone and knowing that this technology can positively impact a college student's education. The current generation of users are considered as iGeners, which means the children in classrooms today are tomorrow's work force and they are always "plugged-in"

(Ferriter and Garry, 2018). This exploratory research study found that over 80% of the population has purchased a smartphone and how students use their phone differs from the traditional way phones are designed to be used.

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