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Gender Based Smartphone Addiction and Aftermath in Family Relations

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Abstract: ***There are distinct modes for communication. Smart phones played an essential role in this era. Smart phones that can also be worked as computer and helps us to do a limited amount of work. According to statistics there are 3.3 billion smart phone users in the world. It also becomes extremely helpful for study purpose and for official purpose. They often create fewer bonds with their family. Due to surplus use of phone it made ravage in family relationship. Thus the usage of smart phone results in considerable deviation in family relationship .This paper deals with gender based smart phone addiction and effect on family relationships. The paper focuses on predictive methods like naive bayes, Knn and logistic regression to find out how the smart phones are going to create an impact in family relations. This helps to find smart phones effects in family relationship. The problems due to high consumption of it can be identified and future precautions can be taken immediately according to it.***

Keywords: Gender, Time spends, Family bond.

I. INTRODUCTION

For communication, there are different means of aids. Smart phones are become a faster means for communication when examine with previous modes. Astonishing pace in the technology benefited in rapid production of Smartphone hence it accelerates the use of smart phones. The enormous service made by smart phone lead great use in Smartphone worldwide. Each individual's personal life's are highly dependent and found of smart phones. Beside of using this portable device just for calls, take photos its extends to GPS facilities, provide real time information keep track of appointments and contacts [11]. Despite of extensive use of Smartphone strive to negative influence in public [4, 5]. Smartphone usage aftermath among youth, adult. Youth and adult are used for official, working goals. Family relations are primarily caused due to immense use of smartphones. It's been regarded that Smartphone forced to move apart or to break up the family bond itself. More particularly, it says that less socially committed category of people are more obsessed with the smartphone. Thus Smartphone habitude among gender and those after effect amid family is analyzed and predicted in this paper.

This made analyze Smartphone addiction regarding the following criteria:

- Smartphone addiction on gender.
- Time spend in Smartphone.
- Smartphone effect in Family Relationship.

II. BACKGROUND STUDY

Apart from disparate age groups smart phone usage has been expanding extensively and it make negative impact as well. After the internet become a sensation smart phone users was relatively few. But this generation is fully captivated by smart phone and its features. Today's life of people which is strongly influenced by the technology made their life without it as pointless and unimaginable.

Thus the influence was in such a way that it drives society not taking any sort of traditional advice like taking opinion from elder for different matters. Its start build up issues in family relations [10], this is the cause of selecting this as a topic as a research paper. Smartphone addiction could be classified as a behavioral addiction, technological addiction; behavioral addiction like overwhelming phone usage, working goals. Family relations are primarily caused due to immense use of habits like repeatedly scrutinizing messages, engagement to other life activities, full time commitment to social medias; and technological addiction that involves human–machine interactions [7] .All these are very close to the features of smart phone addiction. Thus the huge engagement in smart phone formed big gap between family and likely to be solitude.

When considering gender based smart phone addiction both male and female is equally involved in it [6]. Females are more involved in behavioral addictions, those in case of male further into technological addiction. Students use smart phones more for carrying out their academic activities. Employees use to complete their respective works and other groups of people also involved. As categorizing them on the basis of age like youth and adult are equally spend their time [2, 3].

A. Participants and procedures

Smartphone's have become ubiquitous in people's lives, and to some amount it generates negative impact. The inadequacy of such studies provokes to investigate more about Smartphone addiction and how it's effect on family relations. As per cross sectional study conducted in October 2019 that helped to collect data from different sources,

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a total of 280 people participated in an online survey to collect the general information among this paper. The analyze methods such as naive bayes algorithm and logistic regression, KNN method showed that the people who had Smartphone addiction demonstrated less commitment towards family as compared to those who were not addicted having more affection towards family. And also the Smartphone addiction will make the people to criminal mentality in their life and through they get entire guidance from internet.

While considering Smartphone addiction among gender group of female and male which it showcase habit of using phone for daily life's. According to survey conducted and analyzed 55% of female and 45% of male users identified. Female supremacy in this time period is exterensively increased. Similarly, males also exhibit an addiction towards usage of Smartphone. When looking at category wise addiction; 62% of youth and 38% adult population are in to it. Time spend in using apps shows the unstoppable propensities. From this it explains in context of Smartphone usage aftermath in family relations.

B. Methods

By data collecting and performing predictive methods like Naive bayes, KNN, logistic regression. Naive bayes classification algorithm [1] on basis of bayes theorem with strong and naïve autonomy inferences. It cut down information by assuming that features are independent of given class. General equation for bayes theorem follows:

P(A/B)=(P(B/A)P(A))/(P(B)),where A and B are events[12].

KNN is a classification method and apathetic studying method, which analyze all the given training set. When there is no such proper knowledge about distributed data, the KNN method is extensive and useful approach for analyze data. One way to enhance its efficiency is to find some representatives to represent the whole training set for classification.

Steps for KNN:

1: Selecting training set.

2: Assuming value for K that is nearest data point.

3: Calculate the Euclidean distance .Based on it sort in to ascending order.

4: From sorted array choose top k value. Based on frequent case assign class to the test point.

Regression is a statistical analysis method for predict a group of data based on the data set. It has turn into an essential tool in the control of machine learning. This is an oldest classification procedure and statistical analysis method for predict a group of data based on the data set. It has turn into an essential tool in the control of machine learning, and also it's a software packages. They do by taking a hyper plane to separate the classes as well as posible.The logistic regression classifier is a conditional prospect that is maximized.

III. RESULT

Sample Characteristics: According to response rate gender (female/male) were 148 (53%) of 280 is female, 47% of them are male, followed by youth (62%) 175 and (38%) 105 were adult. The time spend on the apps are divide to low 88(31%), medium 111(40%), high 81(29%).App usage criteria and again classified in to normal 93(33%), moderate 109(40%), addicted (27%).In family bond 124(44%) is good and 156(56%) is bad.

Taking family bond, gender and time spend as 3 main classes and applying algorithms presents that, the naive bayes applied on family bond shows correctly classified instances as 92.8571% and 7.1429% as incorrectly classified instances. Similarly naïve bayes applied to gender class correctly classified instance is 86.0714% and incorrectly classified instances shown as 13.9286%. Naive bays on time spend shows 60.3571% are correctly classified instances and 39.6429% as incorrectly classified instances. Applying logistic regression on family bond gives 95.3571% as correctly classified instances, 4.6429% as incorrectly classified instances .Same as on gender indicates that 86.4286% is correctly classified, 13.5714% incorrectly classified instances. Finally the third criteria time spend shows 62.8571% correctly classified instance, 37.1429% as incorrectly classified instances. Now processing KNN algorithm on family bond indicates 95% as correctly classified and 5% as incorrect classified instance. This on gender gives 86.0714% correctly classified, 13.9286% incorrectly classified instances. On time spend it shows correctly classified instances as 61.0714% and 38.9286% as incorrectly classified instances.

A. Figures and Tables

Table-1 shows different algorithms applied on the 3 main criteria and it shows accuracy of class labels using TP/(TP+TN)*100 where TP (true positive), TN (true negative) which is (1-TP).Through all these 3 algorithm can comes to a general conclusion that the most frequently females are spend their time in smart phones, so their family relationship indicates really bad, but in case of naïve bayes time spend shows a slight variation among 2 class labels. Checking accuracy rate on basis of class shows family bond has high accuracy than compared other classes, in which KNN algorithm point out most accuracy in family bond (95%) rather in other algorithms [8,9].

Table- 1: Accuracy Table

Algorithms	Class	Class Labels	TP Rate	FP Rate	Correctly classified Instances	Accuracy label
Naive Bayes	Family Bond	Bad	0.942	0.089	92.86%	94.2
		Good	0.911	0.058		91.1
	Gender	Male	0.826	0.108	86.07%	82.6
		Female	0.892	0.174		89.2
	Time spend	Low	0.909	0.323	60.36%	90.9
		Medium	0.144	0.077		14.4
		High	0.901	0.181		90.1
Ibk(KNN)	Family Bond	Bad	0.962	0.065	95.00%	96.2
		Good	0.935	0.038		93.5
	Gender	Male	0.818	0.101	86.07%	81.8
		Female	0.899	0.182		89.9
	Time Spend	Low	0.716	0.188	61.07%	71.6
		Medium	0.36	0.219		36
		High	0.84	0.181		84
Regression	Family Bond	Bad	0.962	0.056	87.14%	96.2
		Good	0.944	0.038		94.4
	Gender	Male	0.826	0.101	86.43%	82.6
		Female	0.899	0.174		89.9
	Time spend	Low	0.727	0.193	62.86%	72.7
		Medium	0.333	0.166		33.3
		High	0.926	0.196		92.6

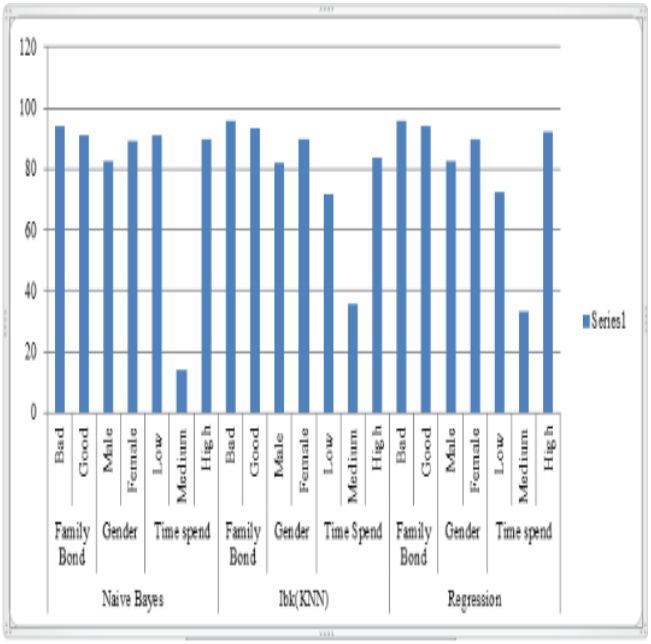

Fig- 1-Class label accuracy graph

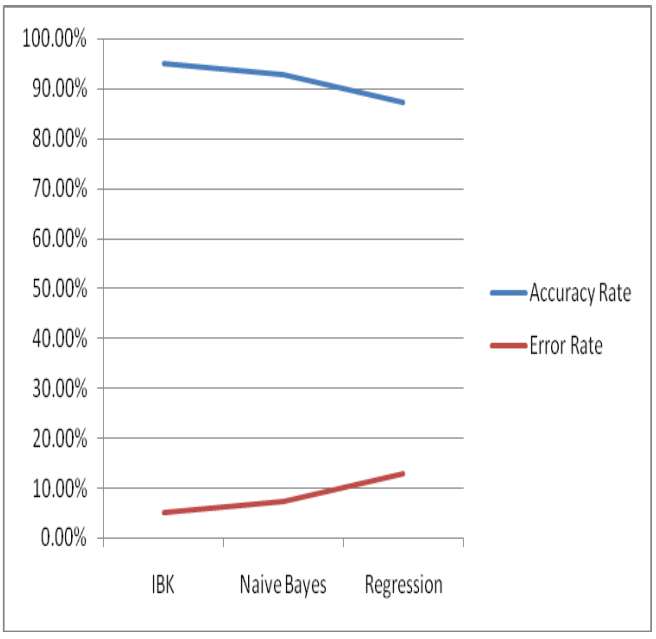

Fig-2-Comparison between Accuracy Rate and Error Rate of Algorithms

Based on the above findings it is clear that females are strongly influenced by smart phones in theses current scenario and result shows that smart phones played vital role in family bonding which form a negative impact in it.Fig-2 shows graphical representation of accuracy rate and error rate between all 3 algorithms to obtain the efficient algorithm among these. .

IV. CONCLUSION

The study aimed to examine gender based Smartphone addiction and its cause generated in family relation. It put forward that the female gender groups are profoundly addicted to smart phones and their family bond found to be extremely bad. This signifies that males are more stick towards the family and are less connect to Smartphone.

After all table-1 exhibits a relation between time spend and family bond which open ups to a conclusion that when more time spended on smartphones develops extremely bad family bond .As matter of course it can be related to gender using different algorithms as shown in table1.This result make to properly guide females about the negative impact of Smartphone and its bad effect on smart phones.

Also it refers to future impact going to happened by the high consumption of smart phones and consequence in family relations, academics and health. By providing interventional programs can helps to prevent this commencement of Smartphone in future..

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