USES OF SOCIAL MEDIA BEFORE CORONA PERIOD AND AT CORONA PERIOD IN BANGLADESH.

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APPROVAL

This Project titled "**USES OF SOCIAL MEDIA BEFORE CORONA PERIOD AND AT CORONA PERIOD IN BANGLADESH**", submitted by PARVEJ AHMED and MASUM ARA MONNY to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on **December2020.**

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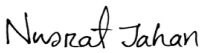

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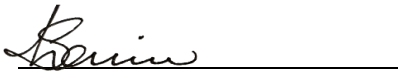

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We hereby declare that, this project has been done by us under the supervision of **Mr. Narayan Ranjan Chakraborty, Assistant Professor, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

The whole world is going on very bad situation for covid-19 pandemic. Not only developed country but also developing or non developing country have graced many problem in this situation. But technology is blessing for all of us. People have benefitted very much by using social media. We can get any updated news or story conscious as well at this bad situation. Social media helps us in different way. Before covid-19 period we were connected with social media but what is the change between on pandemic situation or before or after pandemic situation.

Data is very important thing nowadays. Using data we can predict or analysis anything. In back 20 years we couldn't use or utilize data like now. But day by day our data is going to bigger than past. But that is a question in here, which phenomena is behind on this, why data is bigger now. The only thing is nothing but internet. At past internet was not available like now, so number of user of internet was very less. Data need not to analyze or stored for a few number of user. But at present world, Internet is available in every country and open for whole class people. So a big data set has been stored and it is need to be utilize or analyze. At present world, Most of the people pass their time with idle Because at pandemic situation most of the institution (educational, business, office) has been closed since many days. People are passing their time using different social media for business purpose, educational purpose, Office purpose or just an entertainment. In our study, we will show that what is the different between the number of social media user the then before corona period and at corona period.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The core objective of this research project is to synthesize the social media activities and digital invention in this crisis moment or pandemic situation. In order to obtain our research objective, We conducted a systemic review base on online content .We will first discuss about the activities of social media and gives a overview of social media business, Organization, funds How many people are getting benefited in this platform then we reviewed the digital invention that have been used to fight against covid-19 across. Our finding show that while Bangladesh is capable to take benefit invention approach.Before pandemic situation people were busy with their work, school,college or universities.Corona period has been started for march 2020 and the education institute still remain closed as well.Most of the teenage and adult teenage are in home now. At this situation they conduct with different online platform or social media.Certainly their are something change of uses of social media before corona period and at corona period.

1.2 Motivation

- **Time management:**Most of the teenager,adult teenager are spending lot of time by using social media. How much time they are spending on social media this research will helps to show that.
- **Aptitude:**Sometime we see that a group of teenage people oversell to use different showy social media app like that is nothing but wastes of time.This research will help to find the how much people involve with this.
- **Situation demand:**The world is going on a bad condition at this present pandemic period. There is several impact in developing or non developing country on their economy, communication and medical treatment support. Everything is like static condition. In this situation information and communication technology makes our life dynamic using social media we can communicate each other, we can buy our desired goods, doing business

1.3 Rationale of the Study

At present condition, we are just in a lock down. We cannot go out to universities,school,market or work place. So what, we are conducted with our studies,shopping,workplace, studying in our home as well. It just blessing of revolution of technology. We use various types web application or social media to continue our regular life. But it is a big question that, was it possible before 10 years ago?

No, It was not possible. For that reason, We are working with this research to show that how much people are benefited through technology.

1.3.1 Taking decision

While COVID-19 has disrupted many societal behaviour patterns worldwide, some new, post-pandemic behavioral or pre pandemic trends just might be worth keeping if we want to build back better especially when it comes to information and telecommunication technology. Instead of travelling by car to the shopping mall or our most favourite restaurants for eating delicious food, we learn to cook at home with groceries we have ordered online. Rather than flying to conferences or business meetings around the world, we now connect to virtual events from our home offices. Still, consumption through digital platforms and equipment is not without environmental and climate-related consequences

1.4 Research Questions

- What is the percentage of uses social media before and at pandemic??
- Is there any change use of social media before corona and after pandemic period?
- how technology helps in crisis art pandemic?
- How much time we have spent in social media before pandemic?
- How much time we are spending time in social media?

- Is there any digital invention for covid 19?

1.5 Expected Output

i.In our research, We will show that , The average percentage of uses various online platform(social media)

ii.We will show that, How social media helps us at pandemic situation .

iii.How much time people are spending on social media

1.6 Project management and Finance

Our research based on only quantitive data and algorithm, No any other embedded device or sensor didn't need for our research experiment and implementation.So there is no cost for our research.

1.7Report Layout

The report is divided into five chapters. Each chapter deals with the different aspects of

"How social media helps in crisis(covid-19) and uses of social media: Bangladesh perspective". Each chapter has various parts explaining in detail.

- **Chapter 1: Introduction**
  This chapter discusses the important theoretical concepts behind our project. Here also discusses motivation, rational of study, research question and expected output.
- **Chapter 2: Background**
  This chapter discusses about related works, research summary, scope of the problem and challenges.
- **Chapter 3: Research Methodology**

This chapter discusses about research subject &instrumentation, procedure of data collection, statistical analysis implementation requirements.

- **Chapter 4: Experimental Results and Discussion**

  This chapter discusses about experimental results, descriptive analysis.

  Chapter 5: Impact On Society ,Environment and Sustainability

  This Chaper will discuss environmental impact and social impact of our study

- **Chapter 6: Summary, Conclusion, Recommendation and Implication for Future Research**

  This chapter discusses about summary, conclusions recommendations, further study

CHAPTER 2

BACKGROUND

2.1 Preliminaries/Terminologies

The core objective of this paper is to synthesize the social media activities in this crisis moment. In order to obtain our research objective, we consider a systemic review base on internet user people. Different types of people are using different types of online platform or social media. Its also vary on age and gender.Data is very important for our modern time. We can do whatever we want just using data. Data can give us our desire output. Using data, we can predict anything. Using data, we can analyze, and then we can predict the future. In the back of 20 years, we don't use data or don't create data like now. So that time, we don't need Artificial Intelligence or Machine Learning. But day to day we are going to make our data bigger than the past. People can't handle or can't remember those data. So that, we need something which can take care of our data. For that, Data Scientist think that, they need some system which can look after their data. So, from this think they started to developed something, who can solve their problem. At a time, they build Machine Learning for track data. But day to day data is growing bigger. So, they need something new which can look after those data. So, for tracking data they started to use Artificial Intelligence. But our data becomes a bigger day to day. So, in the future we need something else to look after those data. Data classifier is an important study for exploring Artificial Intelligence and Machine Learning. It is one of the most used technologies to solve our daily life problems. Recently, it has become a popular research topic too, as the analysis of data is being increasingly essential to scientists and corporate personals alike. In the world of technology, with more and more new discoveries every day, we are facing newer challenges as well. One of the biggest of those issues is data analysis and management. Although the huge amount of data is

impossible to be handled by even a highly expert human team, it can easily be tackled and solved by using Artificial Intelligence.

2.2 Related Works

Now a days at pandemic period, technology helps us more. There are a big change using of social media at covid-19 and before corona period.

A survey of data mining technology for social media analysis. Role of social media in covid-19 pandemic published on international journal of From ties science 4(2) April-2020[1]The impact of social media on panic. During the covid-19 in 9r-qi hudistan.The social and Psychological impact due to covid-19 pandemic in Bangladesh[2]E-commerce and Business impact on covid-19.There are research about united nations Bangladesh covid-19 situation report, Hett response plan macron floods- Bangladesh coordinate appeal[3] The impact of covid-19 on the poorest.Impact on covid-19 about global economy.Comparison between Social economy before pandemic situation and after pandemic.Prediction on global economy after next five year due to covid-19[4]Situation of mental health condition of teenagers and adults. Uses of online platform in our country and global.Impact of social media and digital platform on globally[5]Uses of digital invention on pandemic.How social media helps in crisis moment at pandemic.Impact of covid19 on mass people of India[6]

There are a lots of articles or research paper about the social impact of covid-19.The impact of social media on panic during the covid-19 pandemic this research has published on Iraqi Kurdistan[7].A study on positive and negative effects of social media on society, International Journal of Compute science and society.There are lots of research paper at this present situation.[8]Molla MA-M. Govt now Testing Scrambles for testing kits, ppe. (2020)[9]. Available online at:The New Age. Six of seven thermal scanner in Bangladesh Inoparetive. (2020). Available online at: six-of-seven-thermal-scanners-in-bangladesh-inoperative. Sujan MA, Hasan R. corona virus outbreak in Dhaka air port area. (2020).[10]

2.3 Comparative Analysis and Summary

There are many research paper about cobid-19 or pandemic situation. That is one of the biggest topic in the whole world.There are research about united nations Bangladesh covid-19 situation report, Hett response plan macron floods- Bangladesh.

coordinate appeal, The impact of covid-19 on the poorest.With an extensive research over relevant papers and projects, we have come to the decision of using multiple algorithm classifier. If we use one algorithm to check accuracy, then it can't give us our desire output. So that we use here multiple algorithms for getting our expected outcome. Here we use multiple algorithms. They are,Linear Regression Algorithm.R Square Score Algorithm.Logistic Regression Algorithm.Performance Matrix.Performance Matrix Algorithm.Classification Report.SVC Algorithm.Random Forest Algorithm.

2.4 Scope of the Problems

our research based on quantities data. As there is no previous documents or research paper. So no data is found.

As raw material for our research data was kind of very root level. So many problems have faced to collect data.

Processing of the raw data and calculations of the equations is this research are difficult.

We have taken a group of age people data.Age duration is (15-25).So we couldn't take peoples data manually.We had to collect data with a limitation, We cannot take peoples data who are above 25 years old or who are under 15. But they are using social media also and spending their time.So our research output only show the prediction of uses of

social media those who are 15-25. That's why it is not possible to predict how much time a 30 years old person.
To work with a large data set will give a more accuracy when it will be implemented

But apart from this working with a large data set may gives some uncertain values or garbage value as well.So it has a possibility to gives some error.To manage error is quite difficult.
If any data set contain few amount of null value it is not hard to replace but data set contain different variable. We can replace null value just only one variable.That's create a huge variation of all properties and result. Result may be show error.

2.5 Challenges

We need to explain people that what actually we want to do our research paper.

All data are not actual or fixed. Those are changed day by day.

Attribute selection is a big challenge

To collect data at this present situations from people was the big challenge for us.

As pandemic situation on going one we have to tale peoples interview virtually.

It is not easy to implementation a large data set.

CHAPTER 03

RESEARCH METHODOLOGY

3.1 Research Subject and Instrumentation

Our research based on Internet user only.Because using any online platform or social media is not possible without Internet.We have collected a group of people data in specific area.We basically focused on which social media application they have used before pandemic situation and which social media application they have been using at pandemic situation.Apart from this how time much time they have spent on social media before pandemic and how much time they are spending at pandemic situation.And how social media helps in crisis moment at this situation according to people.Generally raw data set are not able to perform operations and generate expected outcome. As a result, data Pre-Processing is required and it is considered to be one of the most important parts of research. In this phase, we have collected more than 5000 surveys. Here are the Area and favorite uses of social media are noted separately. Gender and Age are also collected as individual entries. The questionnaire contained four independent pieces of information to be analyzed through machine learning.

We need to some application and algorithm to collect,procedure,analysis and Implementation of data.

Data collection tools: Google forms,Interviews,Google search engine,Yahoo.

Data procedure:ms excel worksheet,Google spreadsheet,MS word.

Data analysis & Implementation: CSV file,Google Colaboratory,Machine learning algorithm(Linear regression analysis,r^2 score)

3.2 Data Collection Procedure/Dataset Utilized

We have collect data from Google search engine and we have collected peoples data through Google form.We have collected data from Dhaka Mymensingh zone which consist of around 17 District.As lockdown has been started for many days so we have

collected peoples data from Facebook group,messenger invitation,local interview as possible through Google form.

we extract some pattern from collected data. We have gathered all variable(number of people,age,gender,time,area,social media)

Divide all individual data (Age,gender,area,time,social media using before corona,social media using after corona)

then extract individual pattern. We have used Google spreadsheet to find percentage and extract pattern. We proposed a model which is among the simplest probihistie .It

shows many real world application and face of the strong assumption that all features are independent in given class.

3.3 Statistical Analysis

We have collected data 5000 social media user data through Google form. We have collected data from different district almost 17 district in Dhaka division in the Bangladesh. We divided age into four section. Like teenage, under 15, adult teenage, adult. We can see that most of the user are adult teenage or teenage. While collecting data we focused on most popular social media platform like Facebook,Google, Youtube, instagram, zoom, others.

We make different questionnaire for different types of data. We have collected 15-25 years male female data those who are single or married. Then find the percentage of the all data ratio. In our study we show that the teenage people are using Entertainment app.Like Tiktok and the adult teenage uses Youtube and Facebook more.There are number of variance between male and female, married and unmarried.Unmarried people uses more social media than married people. Female teenage use more tiktok but male teenage use Youtube more.There are a large difference between uses of social media before and at corona period.People have used Facebook before corona but people are using youtube more at post corona period.Apart from this people are spending much time now than before.People are getting much time to use social media now.For example,If anyone have spending3-4 hour per day by using Facebook or Youtube, Now they are spending almost 4-6 hour average per day.That's make a great change of our everyday life.

We have collected 5000 peoples data.Dataset includes male and female both.Male female ratio is given below:

Table3.1:total number of social media user male & female ratio

Male	Female
2725	2275
54.5%	45.5%

There are a group of peoples data.We have collected 15-25 years old peoples data.
Percentage of peples data based on age is given below

Table 3.2:percentage of age ratio

age	15	16	17	18	19	20	21	22	23	24	25
total user	256	2495	360	588	706	680	649	660	451	244	160
%	5.1%	5%	7.2%	11.8%	14.1	13.6	13%	13.2	9%	4.9%	3.2%

We have collected data from different district almost 17 district in Dhaka division in the Bangladesh.

Table 3.3.1:social media user based on area

area	Dhaka	Tangail	Kishoregonj	Narayangonj	Gajipur	Narshingdi
user	296	237	309	265	392	398

Table 3.3.2: Social media user based on area

area	sherpur	Gopalgonj	Jamalpur	Madaripur	Manikgonj	Faridpur
user	220	438	506	419	270	256

Table 3.3.3: social media user based on area

Area	Munshigonj	Mymensingh	Netrokona	Rajbari	Shariatpur
User	263	151	209	136	235

3.4 Proposed Methodology/Applied Mechanism

As our research based on social media user. We will show the percentage the age ratio, which types of social media have been used and what is the percentage of the following application.

Calculate percentage: A percentage is a fraction of 100 which is calculated by dividing numerator by denominator and then multiplying the result by 100.

(part/whole)*100=percentage.

For example, if the number of Facebook user is 5 and the whole number of social media user is 20 then the percentage of face book user is (5/20)*100=25%. This is a basic percentage calculation that is used in school, college. But in our research, we calculate the percentage using excel worksheet.. To calculate percentage, first we need to calculate the total or sum all record.

Total number of record,= ($x_{1+X2+X3+\ldots\ldots\ldots\ldots+n}$)[11]

$$\text{percentage} = \frac{ft,d}{\sum t' \in d ft',d}$$

Prepare e-Resource:

The search engine used to find available online content for digital invention and corona virus, information technology and corona virus, artificial intelligence and corona virus. The search result produce more than 1000sites. We removed the same type content and focused on the same type ICT innovation.[12]

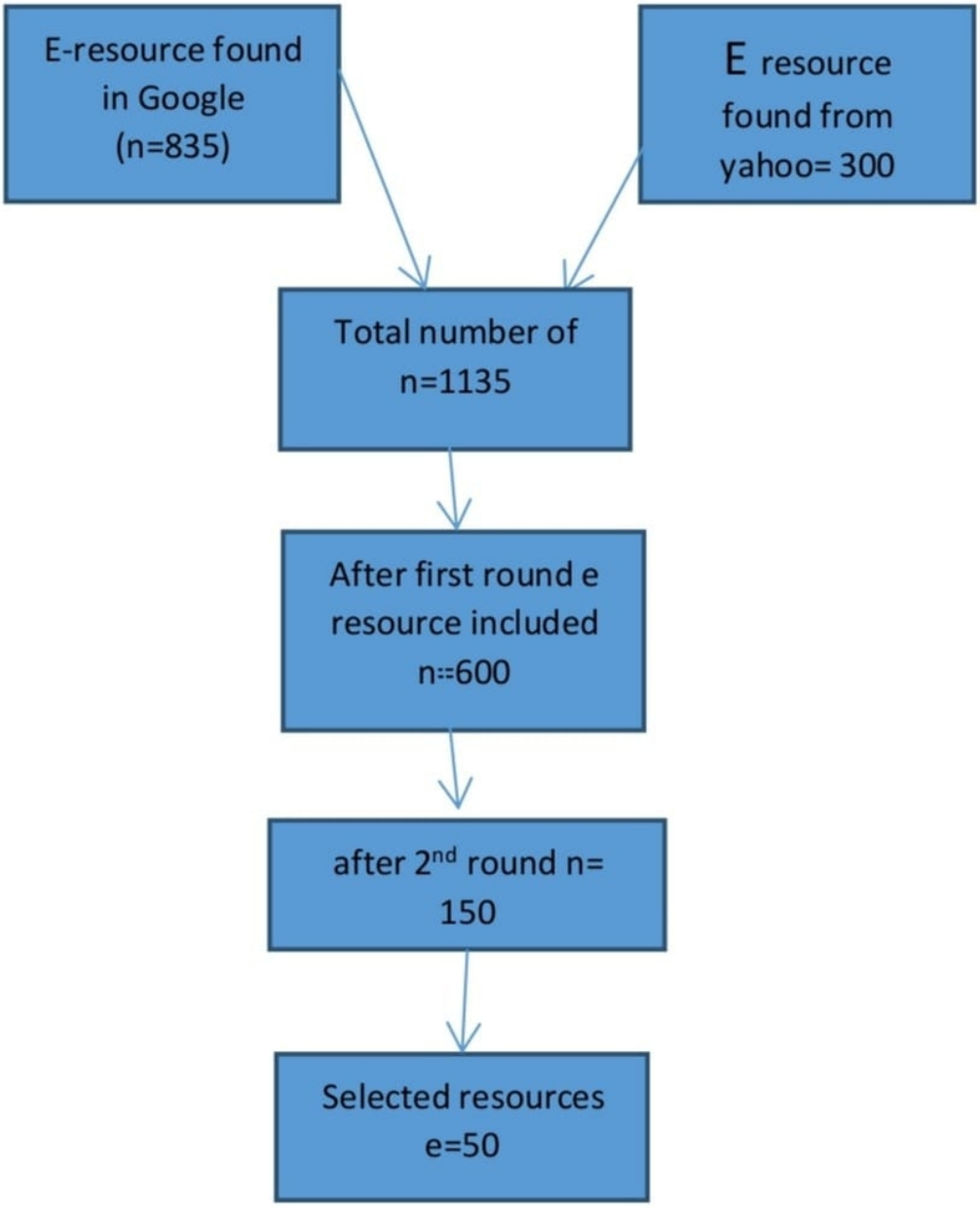


Figure3.1: online resource inclusion flowchart

Linear Regression analysis

Regression is a method of modeling a target value based on independent predictor that is used for finding out cause relationship between variables(variable can be one or many.The type of relationship between the independent and dependent variable based on a number of independent variable.There are many types of regression model.[13]

Simple linear regression

There is a relationship between the independent and dependent variable and the number of independent variable is one.The function of linear regression is given below:

$$y = a + bx$$

For example,there are a set of student data(data includes roll and marks).Here roll number is independent variable and marks is a dependent variable.we can predict marks through roll number.[14]

Mean squared error function

The cost function helps to find out the best fit value coefficient of variable that will provide the best fit line for the data point.We have to convert this problem into minimization problem to minimize the error between actual and predicting value.

$$\frac{1}{n}\sum_{i=1}^{n}(prediction-y)2$$

Minimize $$T = \frac{1}{n}\sum_{i=1}^{n}(prediction-y)2$$

Where n=total number of intent,y=actual value[15]

We choose the function to minimize error(the difference between predicted value and actual value) that minimize the error difference.we square the error difference and sum all data and divided by the total number of data then we will get a square average of data point.

Gradient descent concept

To reduce cost sometime we need to change the values gradient data helps to find error.

$$ao = ao - \alpha . \frac{2}{n} \sum_{i=1}^{n} (prediction - y)$$

$$a\iota = a\iota - \alpha . \frac{2}{n} \sum_{i=1}^{n} (prediction - y)$$

The partial derivative are the gradient and used to update the value.a_0 is the number of training data and α is the learn data.

Weight generation for Root-layer Attributes

Loads for the essential properties of a choice issue can be produced by investigating the chronicled information. Here, term frequency (TF) indicates the significance of a definite term within the overall document.Term frequency of a term 't' can scientifically depict to as

$$\text{Term Frequency, TF} = \frac{ft,d}{\sum t' \in d ft',d} \qquad (1)$$

Whatever, each alternative has some multiple attributes. For this reason, average estimation is computed of the Term frequencies.The normal term recurrence of a property can be depicting to as:

$$\text{Avg TF}_a = \frac{\sum_{i=1}^{N} TF_a}{L} \qquad (2)$$

Here, a= {a_1, a_2, a_3, …., an} Along these lines, the normal TF will be considered as the last loads of the root-level properties.[16]

Handling Uncertainty due to incomplete information.

Highlighting extraction approach investigates the intents of all the gave choices to pick the most ideal option for an activity. Assume there are *N* an diverse options A_j (k=1,… .., N)for a specific activity. In this way, the choices can be characterized to as,

$$x = \{x_1, x_2, \ldots, x_k, \ldots, x_n\} \qquad (5)$$

Assume, there are *L* elementary attributes y_z (*z=1,.....,L*) linked with every simple substitute. The elementary attributes can be expressed as follows:

$$Y = \{y_1, y_2, \ldots, y_z, \ldots, y_L\} \quad (6)$$

In this way, the fundamental properties for y_z (z=1,… .., L) of an option can be scientifically articulated to as y_{jz}; where, j (j=1,… ,N) is the number of alternatives and z (z=1,… .,L) is the quantity of attributes .$y_z$denotes the z^{th} characteristic (y_z) of j^{th} elective (A_j). [17]

Attribute Type

There are fundamentally two kinds of qualities in a decision support system.

Qualitative: Subjective qualities are abstractly critical. The space specialists set the numerical qualities against the emotional assessment. For example:

Average can be transformed into 0.1,
Good can be transformed into 0.5 and
Excellent can be transformed into 1.

The size and numerical assessment of the abstract evaluations of a characteristic can fluctuate contingent upon specialists' suppositions.

1) Quantitative: Quantitative properties depict numerical qualities. For example, the price of one kg potato is 200.

It is very important to handle uncertain attributes while the information of a decision problem is processed. Most probably uncertainty may obtain due to human ignorance while providing inputs. In most of the cases the input provider fizzles out to provide the downright information. Therefore, the final result using some partial data need to be concluded.

For occurrence, “quality time spending on social media” as the input for the attributes that might be attained as (Good, 0.8). It states that the quality of social media while the input provider is 80% sure. Therefore, in this case remaining 20%, is opaqueness.

Now it can be calculated information base is developed utilizing a few on the off chance that rules. These in the event that rules are set by a gathering of area specialists.

The fundamental principles can be spoken to as follows:

$$C_G^F : if \{(I_{1,} J_1) \wedge \{(I_{2,} J_2) \wedge \ldots\ldots (I_{n,} J_T)\}$$
$$\text{then } \{(L_1, \bar{J}_1), (L_2, \bar{J}_2), \ldots\ldots, (L_n, \bar{J}_n)\} \quad (7)$$

Where C_G^F, {(G= (1,2,… ,N) is the quantity of rules and F= (1,2,… ,N) expresses to the quantity of attributes} expresses to the standard for the information base. $I_i=\{I_1,I_2,...,I_T\}$presents properties' assessment evaluation and $J_i\{i\in(1,...,N)\}$ is the level of confidence as far as I_i. L_i (i =1,2,… ,N) is the standard result and $\bar{J}_{ik}$

{(i=1,2,…,N), (k=1,2,….,N)} is the level of Belief as far as L_k .Here, $\sum J_{ik} \leq 1$ and $\sum \bar{J}_{ik} \leq 1$.

Level of conviction B_{ik} can be spoken to by a fluffy enrollment work. All things considered, eq (7) can be composed as

$$C_G^F : if\{(I_1^k, J_{1kn} \text{ to } J_{1km}) \wedge (I_2^k, J_{2kn} \text{ to } J_{2km}) \wedge \ldots\ldots \wedge (I_T^k, J_{Pkn} \text{ to } J_{Pkm})\}$$
$$\text{then } \{(L_1, \bar{J}_{1k}), (L_2, \bar{J}_{2k}), \ldots, (L_n, \bar{J}_{nk})\} \quad (8)$$

The minimum value of the attribute j for the represented alternatives is known plane value and that could be exhibited as,

$$\alpha_j = \min (e_{i,j}) \quad (9)$$

Here, i is the number of alternatives and j is the number of attributes. And α_j is the minimum value of j^{th}attribute.

Feature extraction is the simplest way to elucidate the attributes,

$$\beta_{i,j} = e_{i,j} - \alpha_j \quad (10)$$

Arithmetic difference between the minimum value of a certain attribute and similar attribute of all the alternatives is performed by computing. Where, $\beta_{i,j}$ determines the feature of j^{th}attribute of i^{th} alternatives with respect to j^{th}minimum value (α_j).[18]

By using the following formula, the probability of mass of an attribute can be computed.

$$m_{i,j} = \prod_{i=1,j=1}^{i=N,j=L} (\beta_{i,j}, w_j) \quad (11)$$

Where, weights are represented as w, j(j= 1…….L) is the number of attributes states the weight of jthattribute (e_j) with 0 <w_j ≤1.

The fundamental arithmetic summation formula is used to aggregate the probability masses.

$$C_i = \sum_{i=0,j=0}^{i=N,\, j=L} m_{i,j} \qquad (12)$$

Where, C_i (i=0,….,N) is the utility of i^{th}alternative.

To make the final decision the best alternative can be approved as,

$$C = \begin{cases} \max (C_i), & for\ benefit\ attribute \\ \min (C_i), & for\ cost\ attribute \end{cases} \qquad (13)$$

Here, i (i=1,2,…..N) is the number of alternatives.[19]

3.5 Implementation Requirements

3.5.1 Python 3.8

Python 3.8 is a Python version. It is a high-level programming language. Most of the researchers use it to do their research. It is a highly recommended programming language for AI based work and it is very popular among new generation's programmers because it is very easy to learn and understand.

3.5.2 Google Colab

Google Colab is a free to use open-source distributor of Python programming language. We can work here online through our browser as well as through Jupiter notebook. But the main benefit of Google Colab is it provides us free online virtual GPU access.

3.5.3 **Hardware/Software Requirements**

Operating System (Windows 7 or above)

Web Browser (Preferably chrome)

Hard Disk (Minimum 4 GB)

Ram (More than 4 GB)

CHAPTER 04

EXPERIMENTAL RESULT AND DISCUSSION

4.1 Experimental Setup

In this research, this paper we have selected 5000 peoples data. This process uses the linear regression, r square score. In this section, we apply an algorithm for predicting and finally get results.Using a step-by -step decision-making process can help anyone to make more deliberate, contemplative decisions by organizing relevant information and defining alternatives. Attribute's weight enunciates that affiliated importance of an attribute and described in numerical way to identify the effect of an attribute of a decision-making process.For our model implementation and code implementation we have collected the data first. The procedure is given below,

As we have worked with prediction of popularity of Soft Drinks, we had to collect data from every age, areas and also from any kind of occupations people.

The largest part of our allotted time for the research project was spent in collecting data from people by using our application and also taking survey.We have also collected data from online by using Google Form.

After we have labeled the data, they become perfect for further use.Then we have converted them to numeric type.Then we have finalized and normalized the data, then we can set them in train and test set.Then we have preprocessed our data.

4.2 Experimental Results & Analysis

The test result of linear regression algorithm is 0.39587727747

The test result of r^2 score algorithm is 0.39587727724

After applying linear regression and r^2 score algorith of the data set we get the same result.

So we can say that our data set and propossed model is correct

4.2.1Numerical Study

We have collect data from different aged online user from different district . How social media helps in this situation.

i. Time

ii. Social media uses before corona period

iii. Social media uses after corona period

iv. Social media organization

v. Digital invention

Calculating percentage uses of Social media before corona period: We have calculated percentage of uses social media using google spreadsheet.

Table 4.1: uses of social media(in %) before pandemic

Socia media	youtube	Google	instagram	Zoom	Tiktok/likee	Facebook
Total user	1186	694	514	211	712	1683
percentage	23.7%	13.9%	10.3%	4.2%	14.2%	33.7%

Calculating percentage uses of Social media at corona period: We have calculated percentage of uses social media using google spreadsheet.

Table 4.2: uses of social media(in %) at pandemic

Socia media	youtube	Google	instagram	Zoom	Tiktok/likee	Facebook
Total user	1838	619	533	616	485	889
percentage	37.2%	12.4%	10.7%	12.3%	9.7%	17.8%

Calculate using Time(in hour) of social media before corona period: We have calculated using hour of social media before corona period.Through google spreadsheet we have calculated time.

Table 4.3:Time ratio before corona period

Time(in hour)	1	2	3	4	5
user	196	1374	2268	1004	158
percentage	3.9%	27.5%	45.4%	20.1%	3.2%

Calculate using Time(in hour) of social media at corona period: We have calculated using hour of social media before corona period.Through google spreadsheet we have calculated time.

Table 4.4.1:Time ratio at corona period

Time(in hour)	1	2	3	4	5
user	28	126	299	612	662
percentage	0.65	2.9%	6%	12.2%	13.2%

Table 4.4.2:Time ratio at corona period

Time(in hour)	6	7	8	9	10
user	814	984	1695	312	68
percentage	16.3%	19.7%	21.9%	6.2%	1.4%

Social media helps us different ways at present pandemic situation.We just selected few major content that helps us more now.

Table 4.5:How social media helps in Pandemic

socialmedia organizatio	crisis response	communication	Updated news	Volunteer work	Service work
Total opinion	1581	1493	1122	248	556
percentage	31.6%	29.9%	22.4%	5%	11.1%

4.2.3Digital Invention: Many mobile application or website have been invented due to covid19. Providing updated corona status, Corona tracker through X-ray, GPS, face detecting or mask detecting software.Here are some application name that we have found in search engine.

Table 9:List of application developed in Bangladesh due to covid-19

App name&ref	Corona BD app[]	Corona tester app	Corona prevention	Quarantine tracker	Corona info app
platform	Android	Android	Android	Android	Android

Use of social media before pandemic: We have selected major social media app which is frequently used .Facebook,Youtube, Google,Instagram,Tiktok/likee,Meet. The pie diagram is given below according to most frequently used.

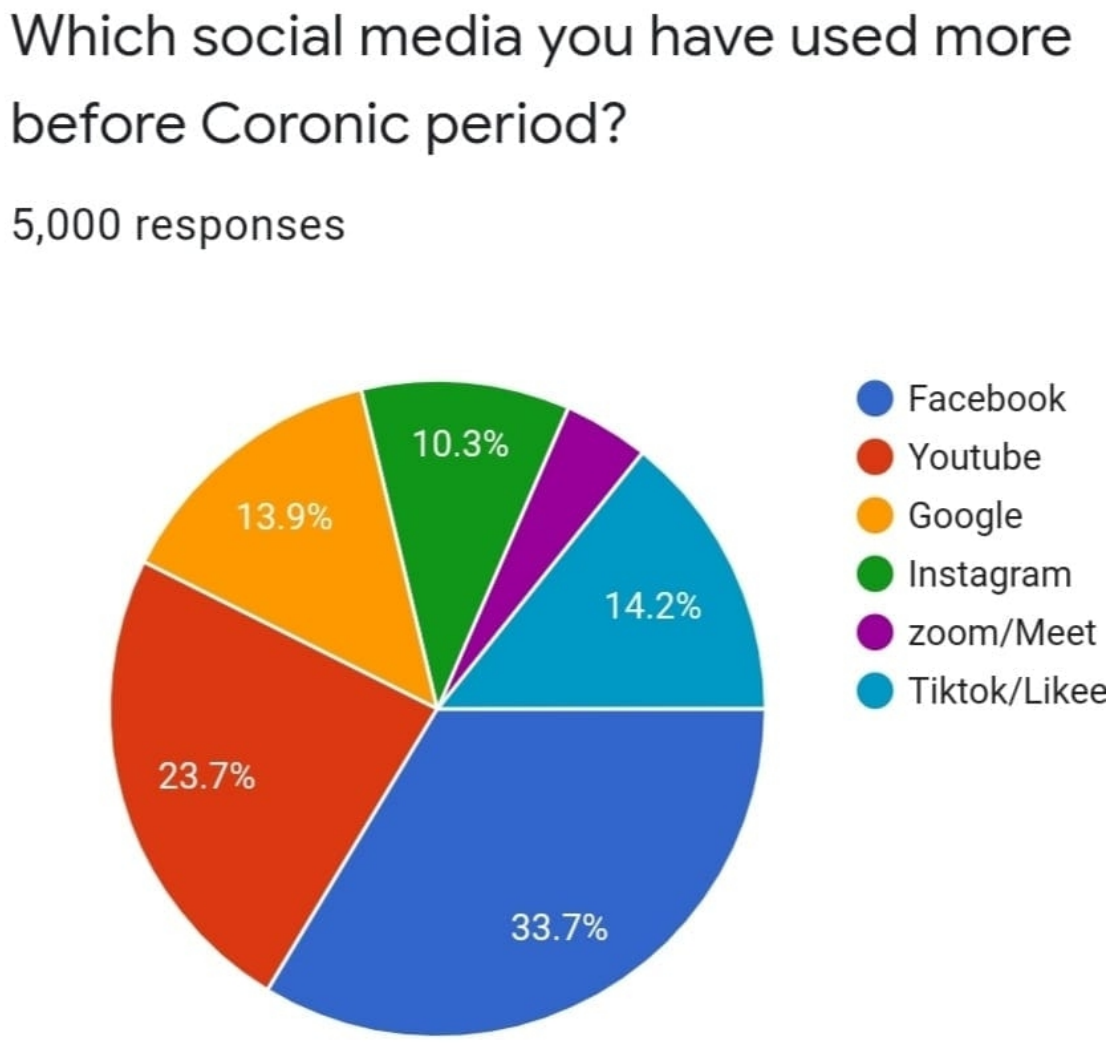


Figure4.1 : uses social media before pandemic

Use of social media at pandemic: We have selected major social media app which is frequently used .Facebook,Youtube, Google,Instagram,Tiktok/likee,Meet. The pie diagram is given below according to most frequently used.

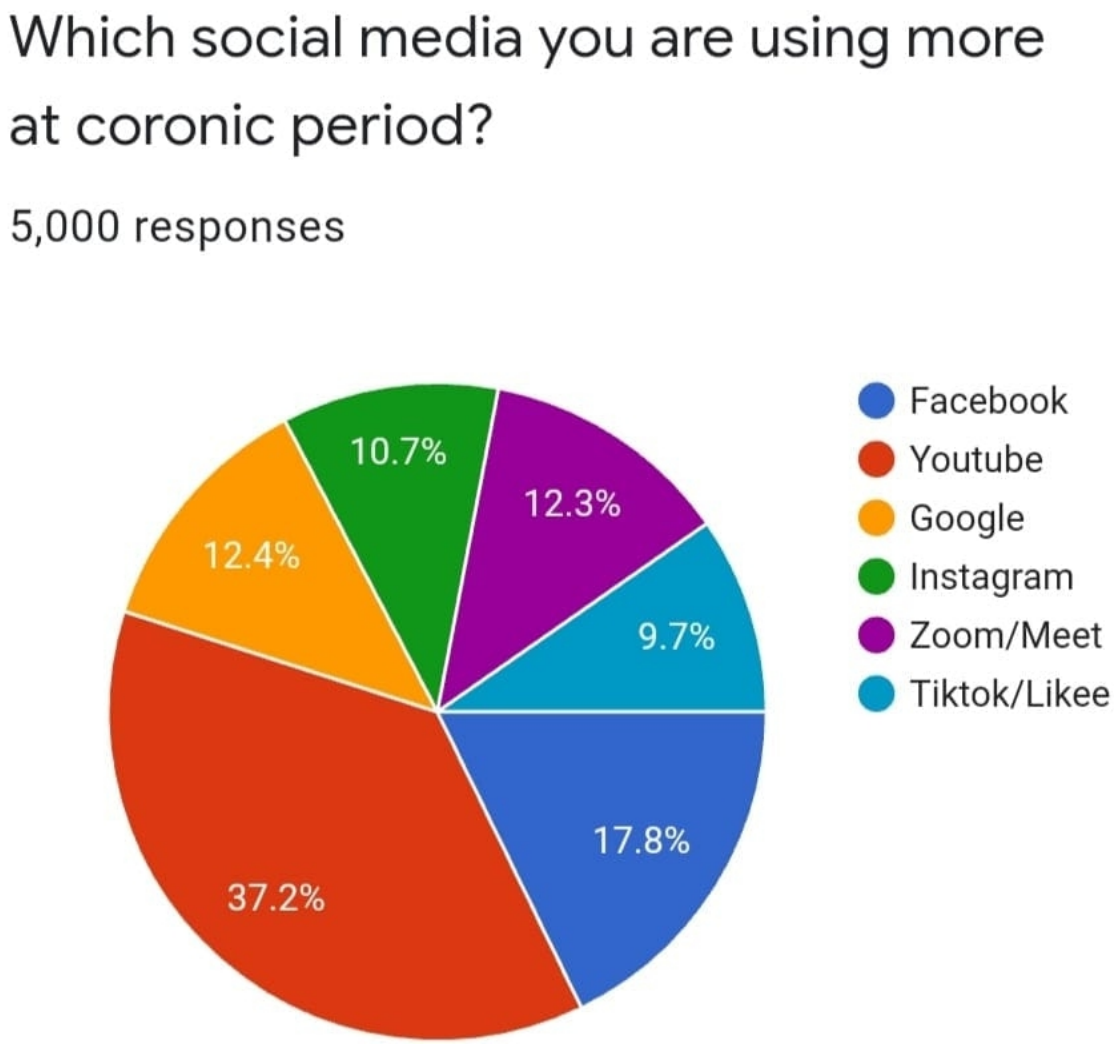


Figure 4.2: use of social media at pandemic

Social media helps us different ways(crisis response,communication, colunteer works,news uodate) at present pandemic situation.We just selected few major content that helps us more now.A pie diagram of social media activities is given below:

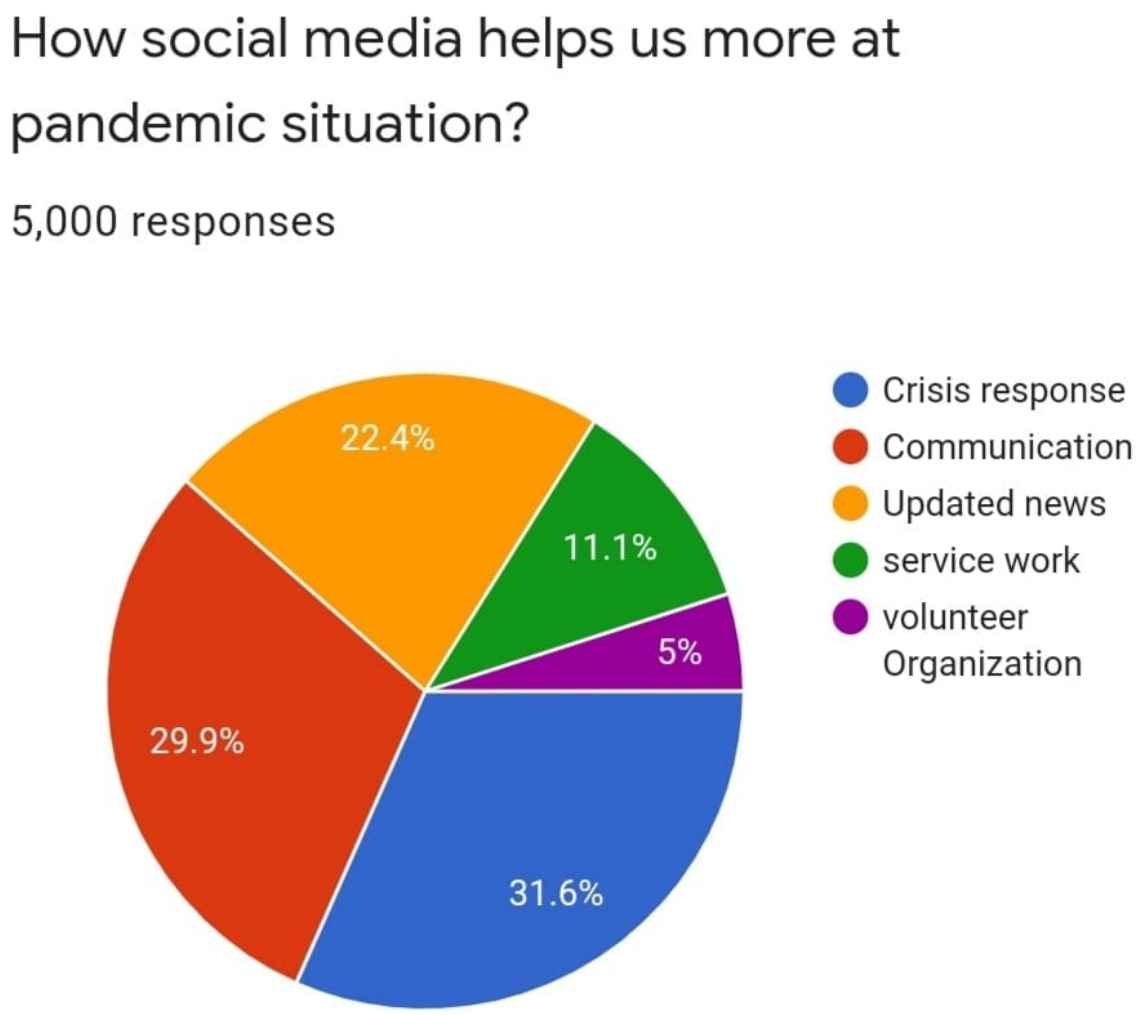


Figure4.3: how social media helps us at pandemic

4.2.3Covid19 & Technology: In response to pandemic spread of covid19 in Bangladesh ,several initiative related to digital technologiesNational web portal providing information that is related to covid19 which called national web portal info.WHO guidlines for emergency safety prevention tips and provide emergency tip.Apart from this social media,web application, Big data, machine learninng technology works for covid19 in Bangladesh.

A diagram is given below which is related to covid19 and technology.

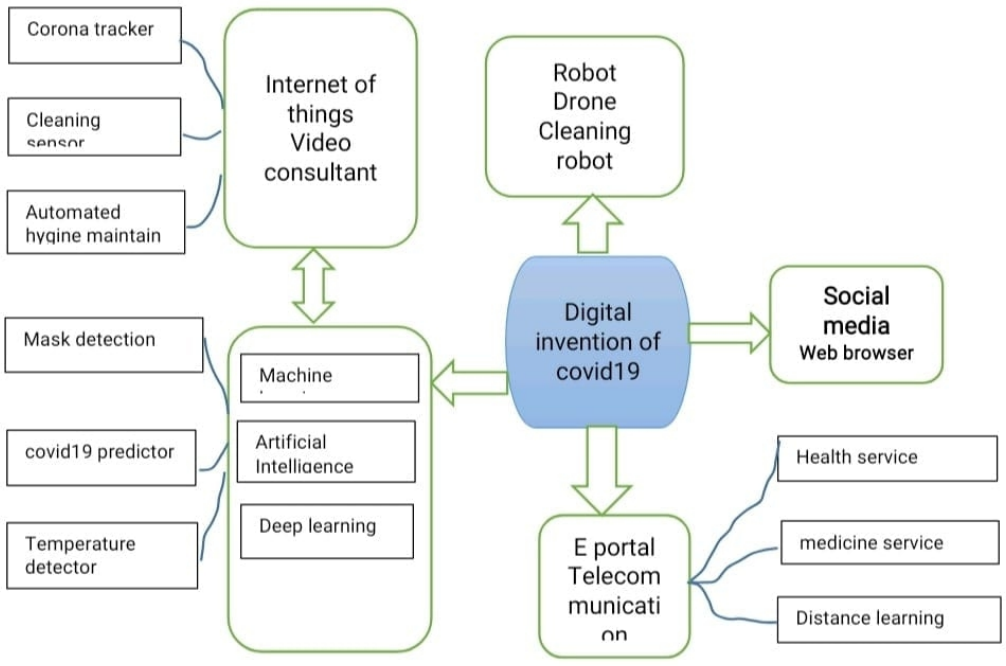


Figure 4.5:Digital invention for covid19

4.2.4Data analysis using different Algorithm

Import library:

First we have to import the library. Imported library list is given below.

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import math

from sklearn import tree
from sklearn.svm import SVC

from sklearn.model_selection import train_test_split

from sklearn.linear_model import LinearRegression, LogisticRegression

from sklearn.metrics import r2_score, confusion_matrix, classification_report, accuracy_score

from sklearn.naive_bayes import GaussianNB, BernoulliNB, MultinomialNB

from sklearn.ensemble import RandomForestClassifier
```

Figure 4.6:Library function

Import data set:

Then we have to import our dataset.

```
from google.colab import files
files.upload()
df = pd.read_csv('dataset.csv')
```

Figure 4.7 :Import csv file

Null checking:

Then we have to check the null value in dataset. If there are any null value. Then we have to handle them.

```
df.isnull().sum()
```

```
[ ]  df.isnull().sum()

Gender                    0
Age                       0
Marital Status            0
Area                      0
Before Corona             0
Before Corona Time        0
In Corona                 0
In Corona Time            0
Help                      0
dtype: int64
```

Figure4.8:Checking null value

There is no null value in our data set.

4.2.5Visualization:

Seeing visualization. We can easily get an idea about dataset. Process is given below.

Seeing this figure. We can get a overview about Application using time before corona.

Seeing this figure. We can get a overview about theApplication using time in corona**.**

We can see that Facebook app has used more before corona period than all other social media.The visualization result has been shown use of social media app consequently

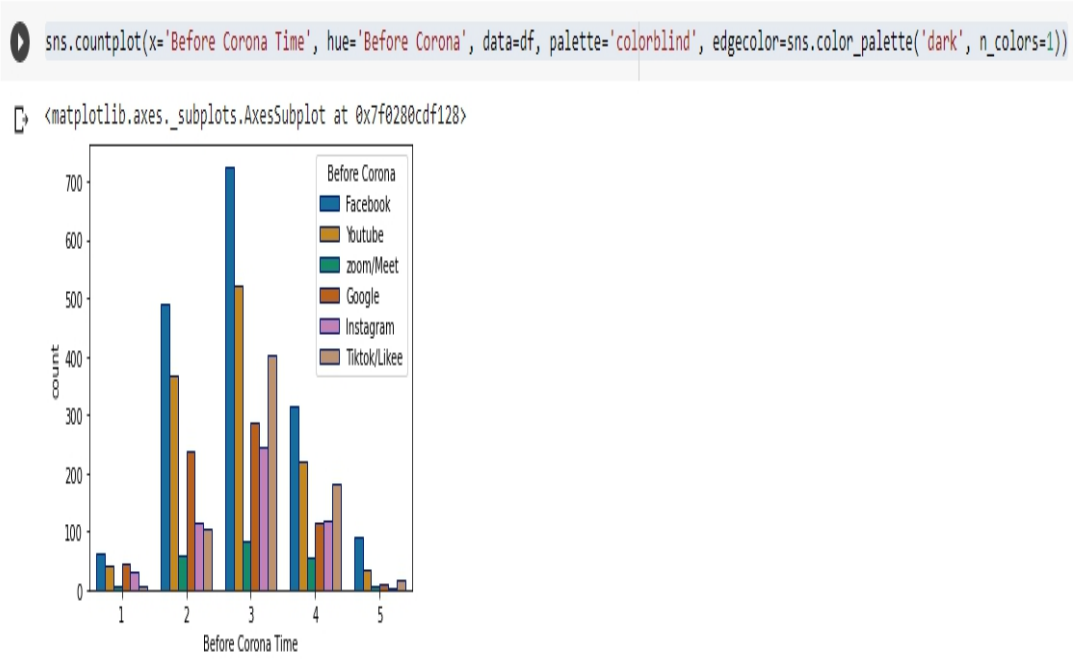


Figure 4.9:visualization of social media according to use.

Seeing this figure. We can get a overview about Application using time before corona age. This bar chart shows that youtube has been using more at corona time.

```
[ ] sns.countplot(x='In Corona Time', hue='In Corona', data=df, palette='colorblind', edgecolor=sns.color_palette('dark', n_colors=1))
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f027c25d470>
```

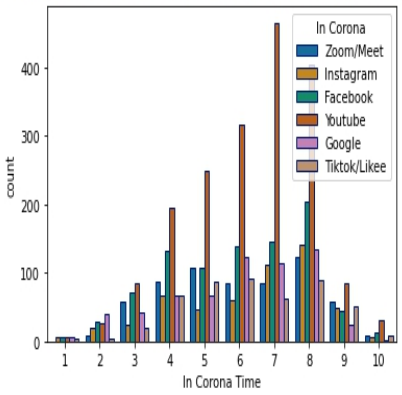


Figure 4.10:use of social media at corona period

This bar chart shows that how much time people spend their time on social media before corona period.The peak time is three hour.Seeing this figure. We can get a overview about Application using time in corona with age.

```
[ ] sns.countplot(x='Age', hue='Before Corona Time', data=df, palette='colorblind', edgecolor=sns.color_palette('dark', n_colors=1))
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f027bce5208>
```

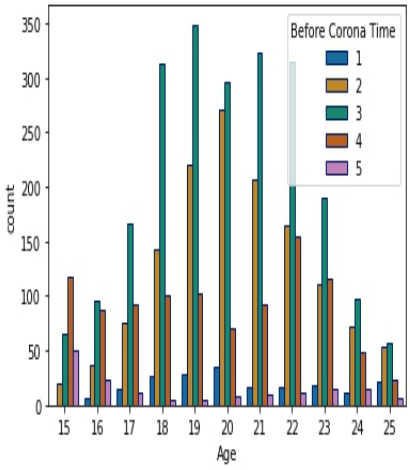


Figure 4.11:Time&age

This bar chart shows that how much time people spend their time on social media before corona period.The peak time is three hour.Seeing this figure. We can get a overview about Application using time in corona with age.

```
[ ] sns.countplot(x='Age', hue='In Corona Time', data=df, palette='colorblind', edgecolor=sns.color_palette('dark', n_colors=1))
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f027b99ab70>
```

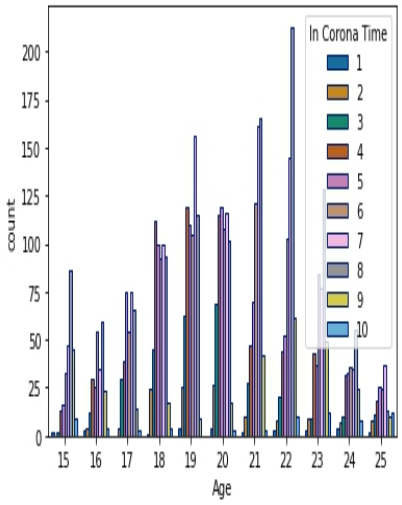


Figure 4.12:age&time at pandemic

Here we do One Hot Encoding.

```
[ ]  Gender_dummies = pd.get_dummies(df["Gender"])
     Status_dummies = pd.get_dummies(df["Marital Status"])
     Area_dummies = pd.get_dummies(df["Area"])
     Before_dummies = pd.get_dummies(df["Before Corona"])
     Intime_dummies = pd.get_dummies(df["In Corona"])
     Help_dummies = pd.get_dummies(df["Help"])
```

Figure4.13:one hot encoding

After Label Encoding, we have to Merger them into dataset and also drop the existing Colum from dataset.

```
[ ]  merged = pd.concat([df, Gender_dummies, Status_dummies, Area_dummies, Before_dummies, Intime_dummies, Help_dummies], axis="columns")
```

```
[ ]  merged.drop(['Gender', 'Marital Status', 'Area', 'Before Corona', 'In Corona', 'Help'], axis='columns', inplace=True)
```

```
[ ]  x = merged.drop('Age', axis=1)
     y = merged['Age']
```

Figure 4.14: Merge data set

Then we have to divided data into dependent and independent variable.

Then we have to divided dataset into train and test.

```
xtrain, xtest, ytrain, ytest = train_test_split(x, y, test_size = 0.2, random_state = 0)
```

Figure 4.15: tarining data set

Algorithm Implementation:

We use here multiple algorithms for getting better accuracy. They are given below.

```
[ ]  regressor = LinearRegression()
     regressor.fit(xtrain, ytrain)
     pred = regressor.predict(xtest)
     regressor.score(xtest, ytest)
```

Figure 4.16Linear Regression Algorithm

Output for Linear regression & Output for R^2 score algorithm :

```
[14] regressor = LinearRegression()
     regressor.fit(xtrain, ytrain)
     pred = regressor.predict(xtest)
     regressor.score(xtest, ytest)

     0.3958772766769824
```

```
[15] score = r2_score(ytest, pred)
     score

     0.39587727667698247
```

Figure 4.17Implementation result

4.2.4Visualization age&social use before corona: Using tableau software we get the result that which social media used more at individual age people.We can see that 18 aged people have used facebook more,then yputube,then tiktok/likee and then other app.Each block contain different color and individual use.

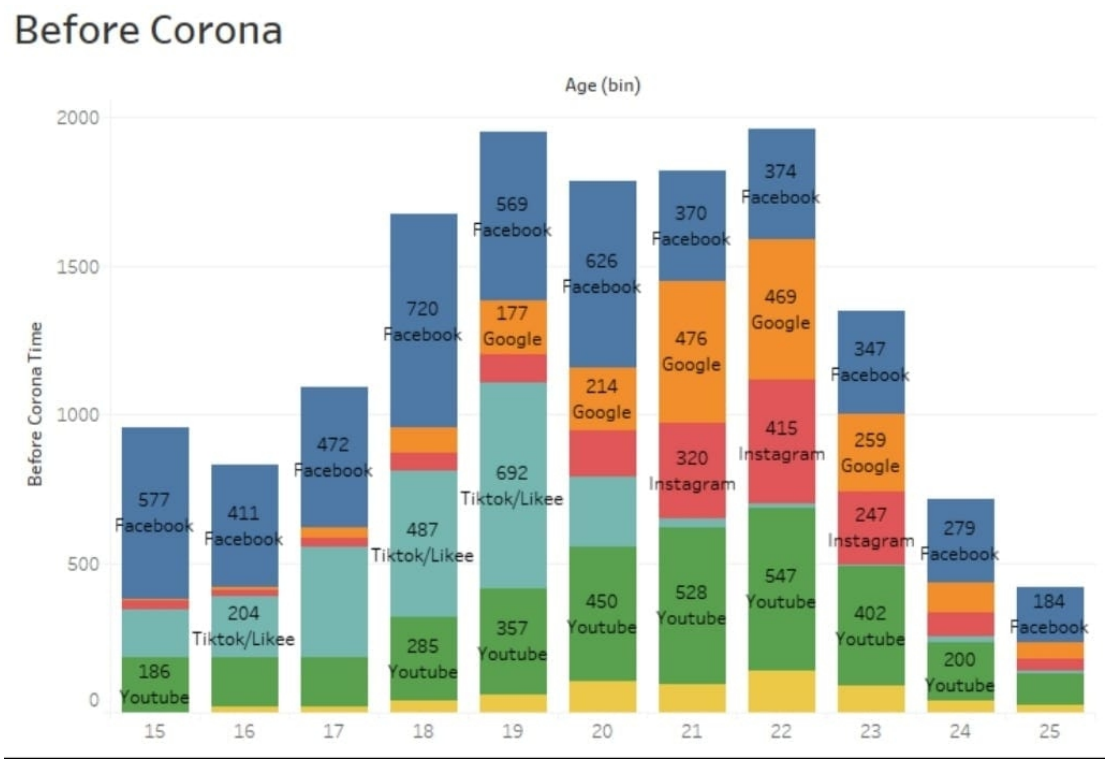


Figure4.18:age&social media app

Visualization age&social use at corona period: Using tableau software we get the result that which social media used more at individual age people.We can see that 23 aged people have used yputube more,then google,then facebook and then other app.Each block contain different color and individual use

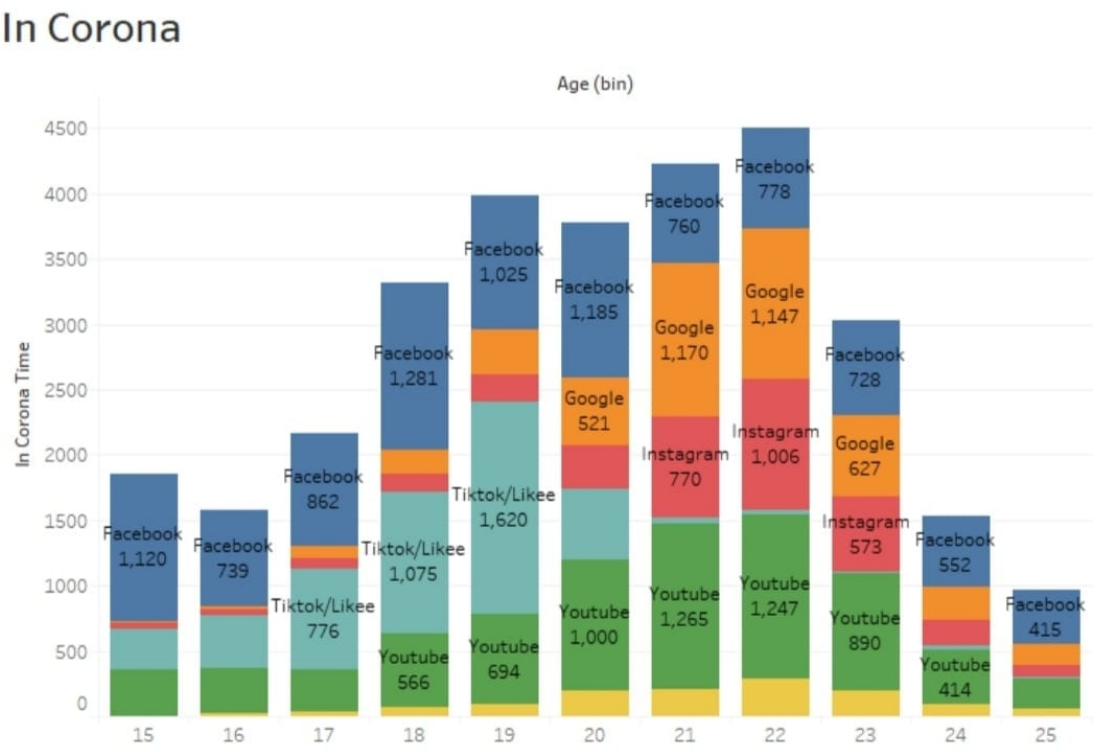


Figure4.19:age&social media app

4.3 Discussion

After completing our work we can see that there are a huge different of time using social media before and at corona period.Before corona period people generally using social media 2-3 hours but at corona period people are using social media at least 4-6 hours average.People have used Facebook before but at corona period people are using Youtube more.The core objective of this paper is to synthesize the social media activities in this crisis moment. In order to obtain our research objective, we consider a systemic review base on anything user. Our study have a number of limitations for our future research.In this paper we have shown the percentage of uses the social media between male and female, adult and teenage. How social medi

a helps us in different way according to peoples opinion.We have collected data from a definite area.Then we processing data to implement and analysis.We have used different machine learning algorithm to analyse our entire data set.

CHAPTER 05

IMPACT ON SOCIETY,ENVIRONMENT AND SUSTAINABILITY

5.1 Impact on society:

The modern age is based on internet and numerous technology. Technology is blessing those who utilize it in good way. We can connect and communicate with each other through social media. So everybody use social media nowadays. Not only adults but also teenagers also uses social media in different way. They spend many time on it than adult. Our school, college, universities have been closed for many days. That directly impact on uses social media.Human psychology deals with many things.sometimes we do something that we were not prepare to do that,it can be happens consciously or uncertainly.using different online platform in one of them.We are spending lots of time by using social media .Most of time we don't know why we using much time on it, what is the reason.very often we waste our time by using different social media.Facebook contains different news and the news is updating time to time,every single minutes.So Facebook can be a very good learner to learn or gather different types of news. There are many Facebook organization, funds,groups. Most of these are being created to people welfare.Many people are benefited by this types of Organization.But there are many fake news or information are in Facebook.Many people are cheated by that.We can see that most of the people have used Facebook before pandemic.Either they gather information or misinformation.But the pandemic situation,Most of the people are using You tube to pass their leisure time .As our research only based on 15-25 years aged people.So almost everyone are students in here.School, College and universities have been closed since many days. So they can get much time to use social media and video content.As youtube consist of numerous video content, Some content include teaching lesson, some of are thriller and some of them only for entertainment

Most of the teenager are using Tiktok or Likee video at the pandemic time.I think this kind of social media app are nothing but an Entertainment or wasting of time.There are a

negative impact on society. But it is good news that,adult teenage do not use that type of app,Rather they have used Google meet app. This app is very helpful for distance learning or any kind of formal official meeting.

We can see that, uses of social media at the corona period and before corona period has a impact on our society.Because everybody belong in a society. Our any single behaviour has a impact on our society.

Our social value is depends on our personal ethics. May our research can be helpful to know how much time teenage or teenage adults giving on social media. Though social media helps us more in many ways but it should keep in mind that we should not use any useless app and giving much time on it.

5.2 Impact on environment

As our research all research tools based on computer or web application,and all of our experiment about quantative and conceptual theory. There is no phisycal existance because we have used software only. Our study and experiment do not contain any harmful chemical or there is no biological existance. So our research hasn't any bad or good impact on environment.

5.3 Ethical Aspacts

We have collected data correctly and legally.We have done our research model and methodology by our own thinking and then apply it.while we using defination, equation and algorithm we were customized all of these by our own and give refference where It is needed.

5.3 Sustainability Plan

Our research data set can be analysed with more machine learning algorithm.
Predicting time through indivisual age.

CHAPTER 06

SUMMERY, CONCLUSION, RECOMMENDATIONAND IMPLICATION FOR FURTHER RESEARCH

5.1 Summery of the study

We have used a sequential model with parameters such as data, label, gender, silent**,** age, area, social media using time. We have used all of those parameters in our research. These have provided accuracy in our work. In fact, by researching on other such works, we have found that using all the parameters gives the best results with the model. Then we have taken the opportunity so that we can optimize the model with best accuracy and output from it.

6.2Conclusion

The core objective of this paper is to synthesize the social media activities in this crisis moment .In order to obtain our research objective, we consider a systemic review base on anything user .Our study have a number of limitations for our future research**.**The core objective of this paper is to synthesize the social media activities in this crisis moment. In order to obtain our research objective, we consider a systemic review base on anything user. Our study have a number of limitations for our future research.In this paper we have shown the percentage of uses the social media between male and female, adult and teenage. How social media helps us in different way according to peoples opinion.

6.3 Implication for Further Study

i.Data can be used in machine learning to predict uses of social media based on age.

ii.Dataset can be used to analyze data(age,gender).

iii.Can be predicted time of using social media.

REFERENCES

[1] world health organization for corona virus 2020: URL http://www.who.itt/health topic/development/com

[2] A study on positive and negative effects of social media on society,International journal of computer science and society.

[3] Impact on social media on panic during the covid-19 pandemic in Iraqi Kurdistan.

[4]Molla MA-M. Govt now Testing Scrambles for testing kits, ppe. (2020). Available online at: https://www.thedailystar.net/frontpage/news/govt-now-scrambles-testing-kits-ppe-1882633

[5] The New Age. Six of seven thermal scanner in Bangladesh Inoparetive. (2020). Available online at: https://www.newagebd.net/article/101488/six-of-seven-thermal-scanners-in-bangladesh-inoperative.

[6] Sujan MA, Hasan R. corona virus outbreak in Dhaka air port area. (2020). Available online at: https://www.thedailystar.net/frontpage/news/coronavirus-outbreak-screening-still-lax-dhaka-airport-1878607

[7]Javed HAl. Passengers from Europe land in Dhaka Bangladesh. (2020). Available online at: https://www.dhakatribune.com/bangladesh/dhaka/2020/03/16/defying-bar-european-flight-lands-in-dhaka

[8]Don't let corona virus tip society into panic, say psychologist. URL http://tingnbal.com

[9] The star . corona virus and social media firms are contributing the spread misinformation about the disease.URL http//tingbal.com

[10]https://corona.gov.bd/?gclid=Cj0KCQiA88X_BRDUARIsACVMYD_nZPmpgQncw3eKYYY7epCKabpn7dyJdDQYyCjjl3hqBXhoqvz3mYEaAuvREALw_wcB

[11]Qian ZP, Chen XW, Kang NX, Chen MC, YuY,Moscibroda T, Zhang Z. Mad LINQ: LargeScale distributed matrix computation for the cloud. In: Proc.of the 7th ACM European Conf. on Computer Systems. ACM Press, 2012. 197210. [doi: 10.1145/2168836.2168857]

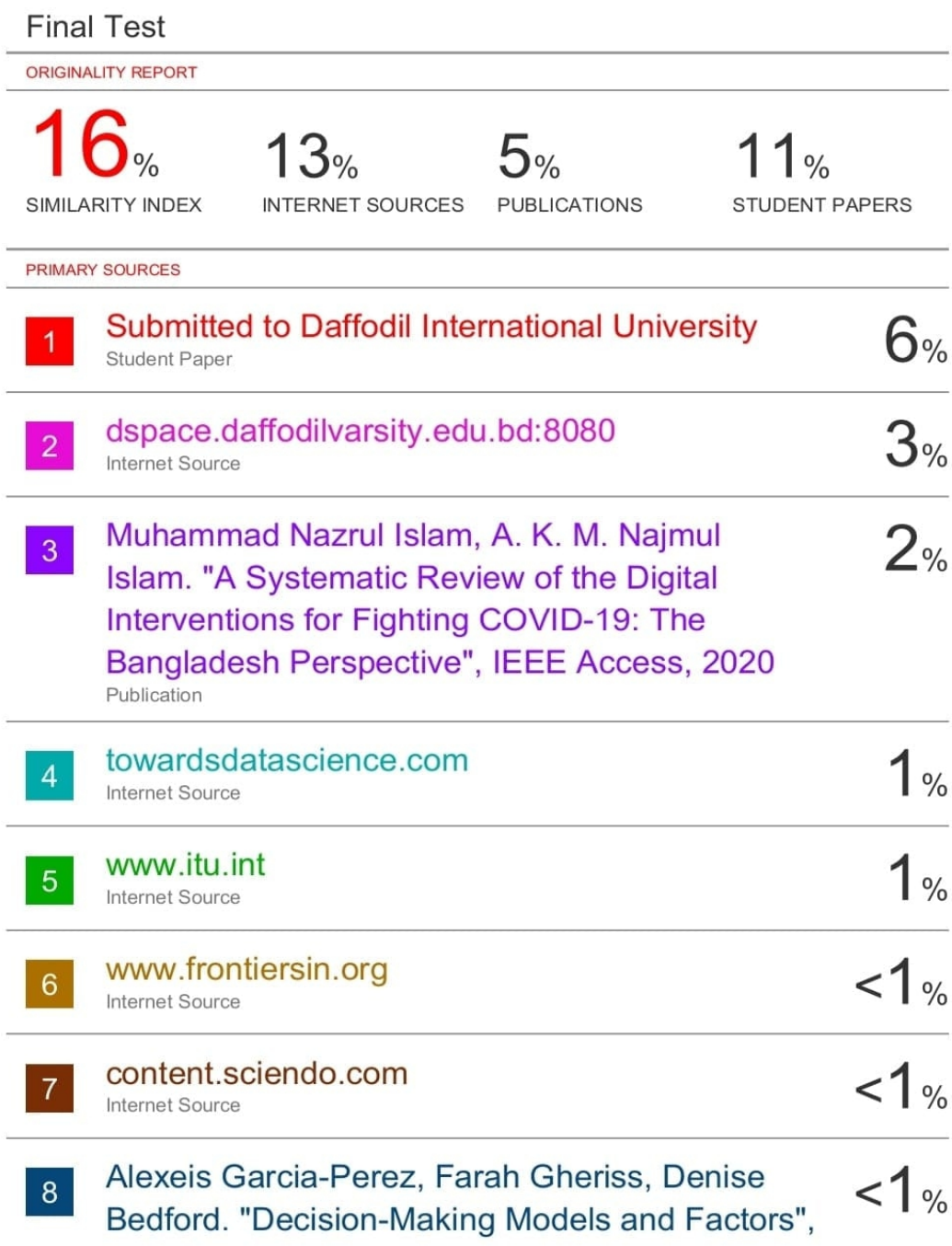
[12]Arel I,Rose D C,Karnowski T P.Deep machine learning-A new frontier in artifical intelligence esearch[J].Computational Intelligence Magazine,IEEE,2010,5(4)

[13]Wikipedia,Petabyte.2014. http://en.wikipedia.org/wiki/Petabyte

[14] Low Y,Gonzalez J, Kyrola A, Bickson D, Guestrin C, Hellerstein JM. Graphlab: A new framework for parallel machine learning. ar Xiv preprint ar Xiv:1006.4990. 2010.

[15] The apache software foundation, what is apachemahout. 2014.

Plagrism Reort :



Final Test

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