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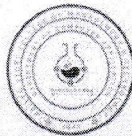(ICAMCTT 2021) ON 30TH & 31ST OF JULY 2021

Paper Title : Impact of Covid-19 on Online Shopping and Reviews on
Some Machine Learning Algorithms

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# Impact Of Covid19 On Online Shopping And Review on Some Machine Learning Algorithms

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*Abstract*— *The covid-19 crisis has brought with it several changes in our society of which the changes in shopping patterns is prominent. To be more precise, the pandemic created an era of online shopping. Traditional purchasing is now replaced with E-commerce .The wide variety of products offered , low expense ,time saving ,ease of transportation are all reasons contributing to this. At the same time there are many challenges and difficulties too, like the need to sustain customer satisfaction. Consumer opinions and transactions are monitored using machine learning techniques to get more information regarding customer satisfaction, interests, shopping behaviours and threats by E-commerce Businesses. But also, there are increasing reports of unfair, confusing, falsified business habits taking place online and many scams also take advantage of the crisis. So the information regarding the users and their interests need be secured and protected in order to avoid fraud and public crisis. The changes in online shopping patterns though situational, can have long lasting effects on entire industry. We have conducted a survey on 150-200 people over the state to analyze the changes in shopping behavior throughout the epidemic .In this paper we give our reviews on papers focusing on the influence of 2019 Novel corona virus (COVID-19) on E-commerce and the changes in the demand and buying behavior of customers. Also, the paper analysis the machine algorithms like J48, Random Forest and Random Tree to find the accurate one.*

*Keywords*— *E-commerce, Novel Corona Virus, Data Privacy, j48 algorithm ,Random forest algorithm, Random tree algorithm.*

## I. INTRODUCTION

Corona virus Disease or COVID-19 is a rapidly spreading infectious disease, first originated in bats or pangolins. Its first human transmission was reported to be in WUHAN, CHINA and later spread across different parts of the world.

Corona viruses are a group of viruses which has the ability to infect both humans and animals and cause sickness. Covid-19 was declared as a pandemic by the World Health Organization (WHO) on March 11th, 2020. The disease is most likely to spread through close contact of within around 6 feet with one having the infection. Fever, breathlessness, cough, sore throat, headache, muscle pains, chills, loss of taste and smell, etc are all the symptoms of this disease. Older adults and people with chronic health conditions are more severe to the illness.

The covid-19 crisis caused many losses to human life worldwide, bought many changes in life pattern and even put forward many challenges to public health, food systems and world of work. Covid crisis turned people's life upside down. Social distancing and lockdowns were introduced, educational as well as business institutions were closed, people shifted their meetups to online platforms, people started working and learning from home, worshipping also turned virtual, people started purchasing online more often, health was taken into serious consideration by many, and so many other changes did also come up. Different sectors were also affected differently. Expert volumes of various sectors including agriculture and fisheries were lessened and a lot more social and economic impacts were formed. Poverty was probably increased in many regions, unemployment rate rose up, tourism and hotel industry also got affected and moreover many people even lost their dear ones during the severe pandemic. This way the changes that followed the disease end up in a very long list. Among all the other effects of covid-19, the change in shopping patterns is very notable.

Covid-19 changed consumption trends globally and in many cases for the long-term. Months of lockdown and social distancing made consumers to think differently on shopping and spending as well. People were restricted to leaving the house only for necessary items and preferred shopping online more often. Face masks, hand-sanitizers and toilet papers were of high demand and so retailers were
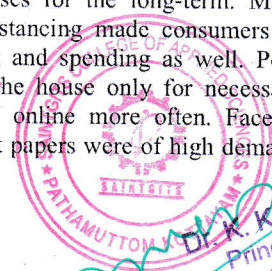
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| Attribute | Description |
|---|---|
| Gender | Specifies the gender of the customer |
| Age | Specifies the age of the customer |
| Use of online platforms | Describes if the customer has used any online platforms for shopping |
| First purchase | Specifies if the customer made his first purchase during covid time |
| Application | Specifies the most frequent application used for shopping online |
| Category | Specifies the mostly preferred category for online shopping |
| Payment | Specifies the mode of payment |
| Scam experience | Specifies if the customer had any scam experiences |
| Reason | Specifies the reason for shopping online |
| Post covid shopping | Specifies if the customer will continue shopping online after covid crisis |
| Satisfied mode | Specifies the satisfied mode of shopping |
| Frequency | Specifies the frequency of purchase |

## V. OBSERVATION

The data that was collected through the survey was analysed as above. Our reviews on papers on the efficiency of the three different algorithms namely j48, random forest and random tree gave us the results as given in the tables.

TABLEII.  ACCURACY OF ALORITHMS

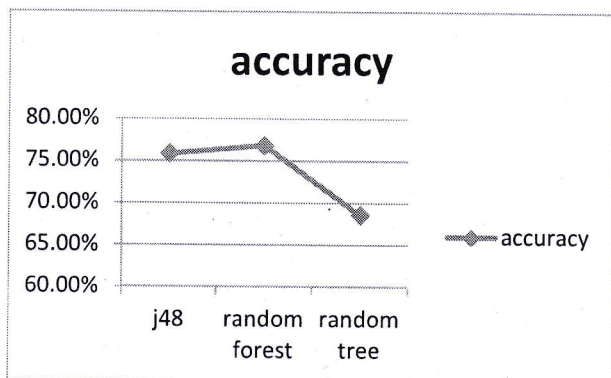| Algorithm | Accuracy |
|---|---|
| J48 | 75.84% |
| Random forest | 76.81% |
| Random tree | 68.59% |



Fig.1   Figure showing accuracy of algorithms

From the papers we reviewed we could give an average accuracy value to the algorithms j48, random forest and random tree as given in the table. We ended up concluding that random forest algorithm was most efficient than others as it showed more accuracy value than other two algorithms. Therefore this algorithm proves to be most efficient one,
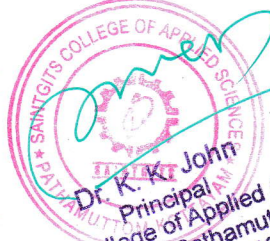
## VI. FUTURE SCOPE

Recent studies shows that people are more likey to prefer online shopping even in the future. The study we conducted also give us similar results that 82.5% prefer shopping online in the post covid era. So the possibilities for increased scam are not small. Efficient technologies will get developed in the future to prevent scams and to enable better shopping experience online. In this information era, value of data is quite similar to the value of a human life. Hence providing more data protection schemes will enhance the trust of customers. Also it enables better prevention from the scams and fraudulent experiences.

## VII. CONCLUSION

In this, paper we conducted a review study on the impact of covid19 on online shopping and the role of data protection and privacy during the pandemic. The covid crisis shifted people to E-commerce platforms which hold the risk of data privacy. For this we organised a survey among consumers of different age groups to study the behaviour of shopping patterns and scam. We could find 12.3%  scams in our survey too which shows the traces of more scams occur all over the world while shopping online during the pandemic..The aim of the study was to find the behavioural change in online shopping during the covid 19 pandemic and efficient data protection algorithm among J48, Random forest and random tree for which we reviewed papers concentrating on the efficiency of these algorithms. As a result, we found that Random forest was the most efficient one as it gave more accuracy value. Therefore we conclude that Random forest is more efficient the than other two and can be applied as a solution for data privacy.