

# Fake Product Review Monitoring System

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**Abstract** - In recent year's product review and rating plays an important role while purchasing a new product on e-commerce websites. The main goal behind this is to improve customer satisfaction. But along with these, product reviews must be real. Nowadays, companies or respected people are posting malicious/fake reviews for financial reasons or to improve product reputation. Because of these fake reviews, people purchase low-quality or products. People getting misled. The ones who post these malicious reviews to intentionally illusive consumers or opinion analysis systems are usually called "spammers" and the illusive reviews are called "spam reviews". As people are now comfortable with web applications and mobile applications, a huge amount of product reviews are coming. As a result of these famous products getting more reviews and other products getting less. Customers can write anything like a review or opinion, this can draw individual attention. That fake review promotes or discredits some targeted products. These can cause business loss for the other merchants. So there is a need to develop a smart system that can track opinions with the sender and classify them into spam or non-spam category.

**Key Words:** Ecommerce websites, Fake reviews, Opinion analysis, Spammers, Spam reviews

## 1. INTRODUCTION

In today's world, most trending websites are e-commerce websites. With the rapid use of the internet, its importance is increasing. With simple and latest facilities it helps people to choose and order any product that they want at their doorstep. While purchasing any item through an e-commerce website, product reviews play a vital role.

Most people go through these reviews before buying any product online. There are many reviews posted by the customers to put their views regarding the product they have bought. But along with these true reviews, many fake reviews can affect the purchase of a good product. These reviews for a product may turn out to be true or false. Reviews appear in e-commerce websites and applications like Amazon, Flip kart, and many more because of financial reasons.

These product reviews are impacted on the purchase of the new item, so the review mustn't be fake. To solve this problem this my project "Fake Product Review Monitoring System" is useful. This system is supposed to apply some filters and Mining techniques on the

product reviews so that it will track fake product reviews.

The only identification of fake reviews is not enough, tracking the people who are giving these fake reviews is also important. So, through this proposed system users will also track so that identification of people will be easy. An algorithm will be used to track product reviews through sentiment analysis techniques and ontology.

### 1.1 Related Work

The proposed system will contain sentiment analysis techniques and ontology for the classification of data.

#### Sentiment Analysis:

It is also referred to as the Opinion Mining Technique. It is an approach of Natural Language Processing (NLP) to identify and classification of different reviews of products, services, etc.

#### Ontology:

Ontologies embedding's are a useful technique to make information available as background knowledge to define similarity measures or to learn features.

The system will also consider the following concepts:

- 1. Identification of an IP address:** The system will identify the IP address of users so that if multiple reviews are found from the same IP then it will consider as a spam.
- 2. Account used:** It will be used to check reviews are coming from the same account or not.
- 3. Brand only product review detection:** It will check whether reviews are regarding product/brand. If they are about the brand rather than the product then they will consider as fake.
- 4. Negative keywords:** It will track negative keywords, if they are frequently used in the comment then product review will consider as fake.

In this paper, I have conducted one survey among the different people to capture the information of e-commerce websites and their opinions on product

reviews posted on the e-commerce websites. The data about the overview is determined straightway.

## 2. SURVEYS

I have surveyed to take opinions and reviews of people regarding their usage of e-commerce websites and product reviews. A questionnaire was sent among 40 people by email. I have exploited random techniques to succeed in responders. Some of the questions I have asked in the survey are given below:

1. What is your age group?
2. What is your profession?
3. Do you know the Ecommerce Websites?
4. How often do you use Ecommerce Websites??
5. Which products do you buy the most?
6. Which parameters do you check before buying the products?
7. Do you check the product reviews before buying the products?
8. Have you given any review to the product that you have buy?
9. Do product reviews help you in purchasing the product?
10. Do you think, products reviews could be fake?

### 2.1 Findings in Survey:

I get thirty-three responses for a given questioner. From every question, we get information about the individual attitude towards product reviews. You can observe the findings that we got from the survey below. The question and its result are explained shortly. Also if there is any dependency between variables, then it is stated shortly.

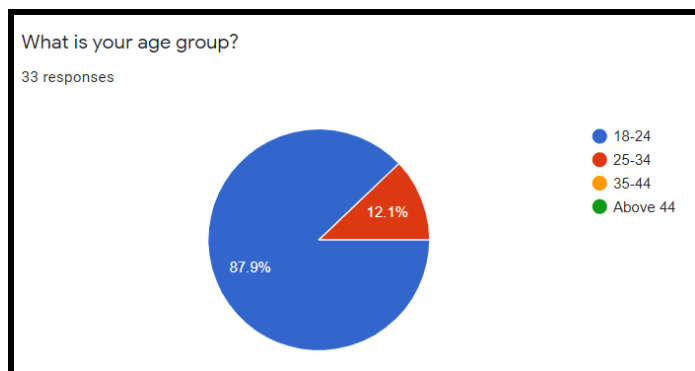


Fig 2.1.1

From the above fig, you can observe that nearly 88% of responders are Youngers.

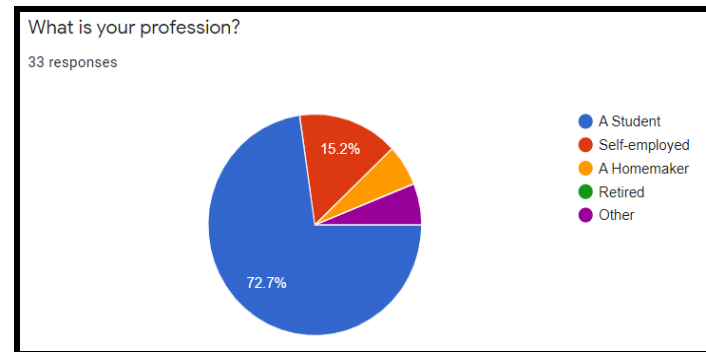


Fig. 2.1.2

You can observe that maximum means 73% of responders are a student and below that nearly 15% are self-employed.

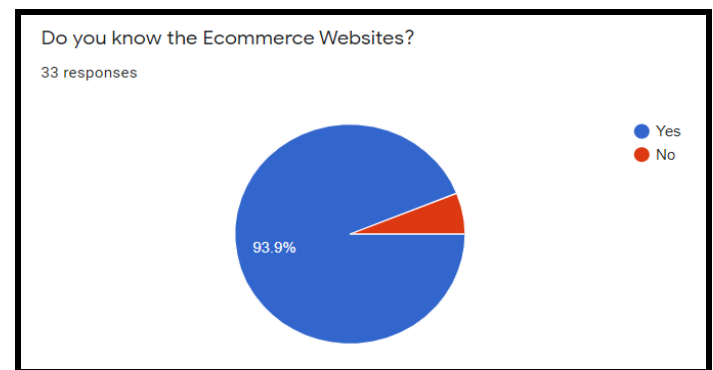


Fig 2.1.3

From the above graph, you can observe that 94% of responders know the e-commerce websites. That means more of the population using e-commerce websites.

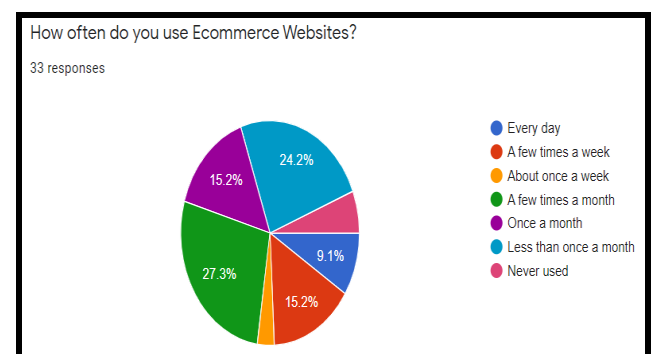


Fig 2.1.4

Here we can say there are only nearly 2% of people are not using e-commerce websites that means the other 98% of people are using websites to purchase the product.

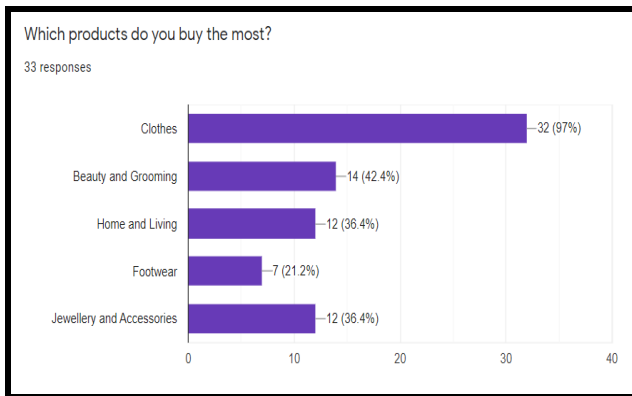


Fig 2.1.5

In the previous graph, we have seen maximum responders are a student so most responders are buying clothes the most.

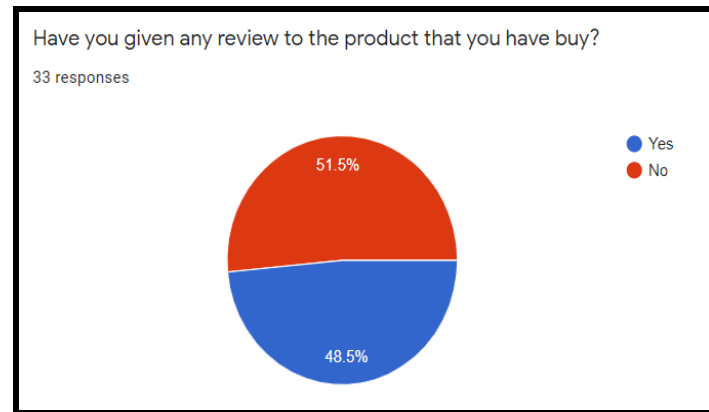


Fig 2.1.8

Here we can observe that 48% of responders are giving product reviews after using/purchasing a new product. That helps the product to define its quality.

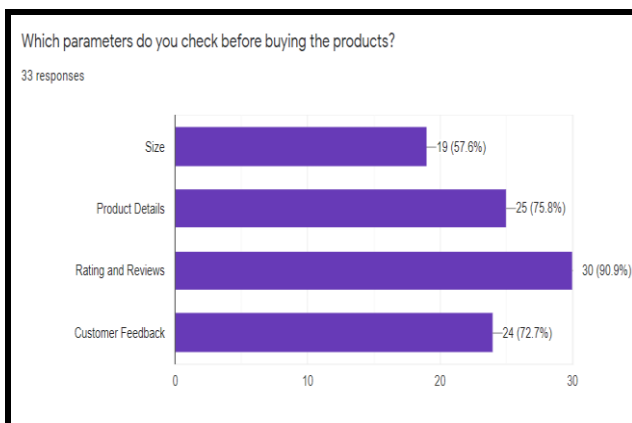


Fig. 2.1.6

Here the first thing is that everyone is checking some parameters while purchasing any product. But the most checked parameter is rating and reviews, so product review is playing an important role while purchasing the new product.



Fig 2.1.9

This figure shows that maximum responders are deciding product quality based on product reviews.



Fig 2.1.7

This graph is showing how all users are dependent upon product review before purchasing the new product online.

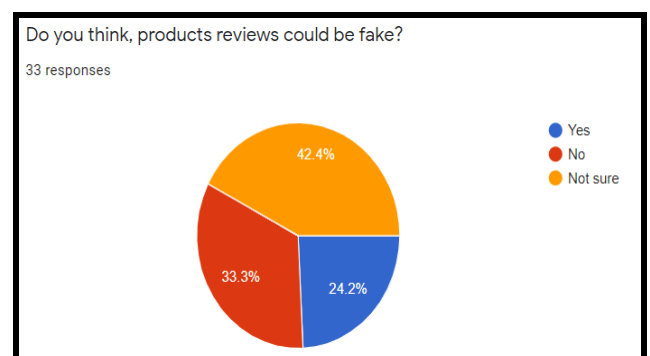


Fig 2.1.10

Here it is important to note that, nearly 42% are not sure and 33% of people are assuming product reviews are not fake. That means the majority of people are assuming product reviews are original so it is the organization's responsibility that only product reviews should be genuine and they need to remove fake reviews.

### 3. CONCLUSIONS

From this survey, we can conclude that product reviews are helping the users while purchasing new items from e-commerce websites. Most of the users are understanding/ assuming all the reviews are real, not faked. This can prove that they might be getting misled from available reviews and purchasing low-quality products.

The "Fake Product Review Monitoring System" helps to identify the fake product reviews from e-commerce websites. Through e-commerce websites products are selling and each product contains a product review. Some organizations post fake reviews on the genuine product and the user gets stuck. This software helps the user to choose the right product so that they can buy genuine products.

The system uses some sentimental analysis techniques for sorting spam and non-spam reviews. Also, the admin gets the IP address of users so that they can track users who are sending fake product reviews. In this way, it monitors the fake review made on any product. And users can be sure about the product's availability on that application and reviews too. There are some future plans for this system like IP addresses will block automatically through which more fake product reviews are coming and improve the system.

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