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A STUDY ON CUSTOMER STATISFACTION WITH REFERENCE TO AMAZON E-COMMERCE USING DATA ANALYTICS

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ABSTRACT

The term "big data" refers to a technology that aids in the management of massive amounts of data. Data collecting is being digitized in today's world, when practically everything has gone digital. A company's data refers to all of the important information it has about its consumers, market insights, and even its competitors' marketing efforts. All of this information is examined and used to develop strategies. Amazon's recommendation system makes use of its data. When a user searches for a specific product, this information aids the platform in determining what else the person might be interested in. As a result, Amazon can improve their process of persuading customers to buy something. The main objective of the study is to determine how Amazon uses Big Data to find out the buying behavior of its customers. To analyze how big data helps to find out the customer spending habits, to evaluate customer satisfaction that helps build brand loyalty. The illustrative study is executed through questionnaires using Google Forms, and a few Journals, Articles and Websites visited. The number of samples used in the Primary data collection are 79. After the whole research, it is found that application of big data needs a lot of supervision, skill and is cost involved.

Key words: big data, Amazon, Amazon customer loyalty, Big data in Amazon, Customer satisfaction in Amazon E – Commerce, Business Analytics in Amazon

INTRODUCTION

Amazon is a multinational technology corporation based in the United States that specializes in e-commerce, cloud computing, digital streaming, and artificial intelligence. Along with Alphabet (Google), Apple, Meta (Facebook), and Microsoft, it is one of the Big Five corporations in the United States' information technology industry. The corporation has been dubbed as one of the 'world's most powerful economic and cultural forces', as well as the 'world's most valuable brand'.

Amazon has shifted gears. From being a pure e-commerce player to a giant that offers more than just products, Amazon has evolved every time a period of transformation in technology has arrived in the tech industry. Now, its main focus is on big data, big data processing, and is changing from an online retailer to a big-data company. It makes use of multiple big data technologies. Big data refers to massive, difficult-to-manage data volumes – both organized and unstructured – that inundate enterprises on a daily basis. Big data may be evaluated for insights that help people make better decisions and feel more confident about making key business decisions. Amazon's success can be attributed to their "everything under one roof" strategy. Customers, on the other hand, can easily become overwhelmed when confronted with such a large number of options. They effectively become data-rich, with a plethora of possibilities, but insight-poor, having no notion what the ideal purchase decision for them would be. Amazon's recommendation engine is built and fine-tuned using Big Data obtained from users while they explore. The more information Amazon has on you, the better it will be able to forecast what you want to buy. And, once the store understands what you might desire, it can simplify the process of persuading you to buy it – for example, by recommending different things rather than requiring you to search the entire catalogue. Amazon's recommendation algorithm is based on collaborative filtering, which means it determines what you want by constructing a profile of you and then recommending things that people with similar profiles have bought.

Every time a client visits Amazon, the company collects information about them. Amazon tracks what you look at, your mailing address (Amazon can make an incredibly accurate prediction of your income level based on where you reside), and if you post reviews/feedback, in addition to what you buy. This mountain of information is utilized to create a "360-degree view" of you as a consumer. Amazon can then discover other people who fit into the same exact customer category (for example, employed males between the ages of 18 and 45 who prefer foreign films and live in a leased property with an income of over $30,000) and make recommendations based on what those other customers like. Amazon uses a big data-driven anticipatory shipping methodology to anticipate which products are most likely to be purchased by its customers. As a result, Amazon analyses your purchasing patterns and sends products to your local warehouse, which you might use in the future. Amazon also optimizes prices on its websites by taking into account factors such as user activity, order history, rival prices, product availability, and so on. Amazon uses this strategy to offer discounts on popular items while profiting from less popular items. This is how Amazon employs big data in its operations. Data science has established itself as a major force in the industry, assisting it in its growth and improvement. Amazon is only one example of a company that makes use of big data. Airbnb is another industry leader that uses big data in its operations; you can read about it in their case study. The following are four ways in which big data affects every business.

REVIEW OF LITERATURE

Mustapha Bouake et al., aimed to shed light on the role of big data in the promotion of Amazon's e-commerce. The study concluded that the success of the company is due to the early adoption of the principles of BD, and its integration into the commercial strategy. The company has also been able to invest heavily in the development of applications for the big data analytics, as well as designing a technical map that responds to the concerns of customers, gives greater ability to track their behaviors and protect the procedures of shopping, delivery, and payment, which indicates that Amazon's success in leading e-commerce involves standards of the control degree over the vast amount of data, the team skills and the nature of the technical tools to achieve its strategic vision. It is also expected that big data entry will continue breaking new horizons in this area in the foreseeable future.

Hong-Mei Chen et al., (2016) explained that Big data offers great opportunities for innovation. However, at the end of 2014, at the peak of its hype, big data deployment was still scarce and failures abounded. This article presents a case of how Lufthansa, the largest airline in Europe, successfully tackled the task of discovering value from big data, addressing the inherent technical complexities, and transforming their business model of selling airline tickets to customers to one that we call "Amazon in the Air" where service-dominant logic prevails. This case demonstrates that IT innovation is the business imperative to survive and exemplifies the complex business environment and rapid changes for which big data is being considered. Our case study also sheds light on the challenges and critical success factors for innovating with big data and how to navigate through uncharted waters, employing new thinking and new approaches to seize innovation with big data.

Ritesh Pathak et al., (2021) proposed that Amazon obtains personal information about each of its customers when they use the website. Aside from the things that customers buy, Amazon maintains track of what they've looked at, their shipping addresses, and the reviews they've written. Big Data has played a significant part in establishing Amazon as a prominent e-commerce platform. The inventory is tracked by the manufacturers to ensure that orders are fulfilled quickly. Big Data enables the consumer to choose the warehouse closest to them, thus lowering transportation costs.

Sean Galea Pace et al ., (2020) opined Amazon gathers individual data on each and every one of its customers while they use the website. In addition to what a customer buys, Amazon observes the items looked at, shipping address and whether a customer leaves reviews. Big Data has helped propel Amazon to the top of the e-commerce pile. The company links with manufacturers and tracks their inventory to ensure orders are fulfilled quickly. Through Big Data, it allows the warehouse closest to the customer to be selected and shipping costs to be considerably reduced by 10-40%. With Amazon's grip on the field showing no signs of slowing, data and the ways it's used is more important to the long-term future of companies than ever before, or run the very real risk of falling behind to competitors

Bernard Marr et al., (2021) said that Amazon uses Big Data gathered from customers while they browse to build and fine-tune its recommendation engine. The more Amazon knows about you, the better it can predict what you want to buy. And, once the retailer knows what you might want, it can streamline the process of persuading you to buy it – for example, by recommending various products instead of making you search through the whole catalogue. Amazon's recommendation technology is based on collaborative filtering, which means it decides what it thinks you want by building up a picture of who you are, then offering you products that people with similar profiles have purchased. Amazon gathers data on every one of its customers while they use the site. As well as what you buy, the company monitors what you look at, your shipping address.

Priyanka Pant et al., (2020) proposed Amazon began its journey by offering the finest possible customer service. It used big data to reach this goal by collecting, filtering, and analysing it in order to improve the site's functionality and back-end process. Amazon's use of big data is a perfect example of data science's power when used correctly. This also explains why the organisation is always on the lookout for the top data scientists.

STATEMENT OF PROBLEM

- The research gap there have been studies about the impact of Big data on Amazon
- But that gap is that there is no study on the customer satisfaction in Amazon E- Commerce

RESEARCH METHODOLOGY

- Sample size is 79
- Data type : Primary data – survey online
- Data collection Tools: percentages, Averages.
- It is a Convenience sampling technique.

RESEARCH OBJECTIVES

- To determine how Amazon uses Big Data to find out the buying behavior of its customers.
- To analyze how big data helps to find out the customer spending habits.
- To evaluate customer satisfaction that helps build brand loyalty.

LIMITATIONS OF THE STUDY

- The study was restricted to only Hyderabad
- The study is elaborated so it is time

- Sample is heterogeneous in nature
- The responses are dependent on the knowledege, attitude and ethical sense of the respondents so there might be changes in responses with time

DATA ANALYSIS AND INTERPRETATION

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the age category of the respondents. The agewise classification of the respondents have been in Table No.1.

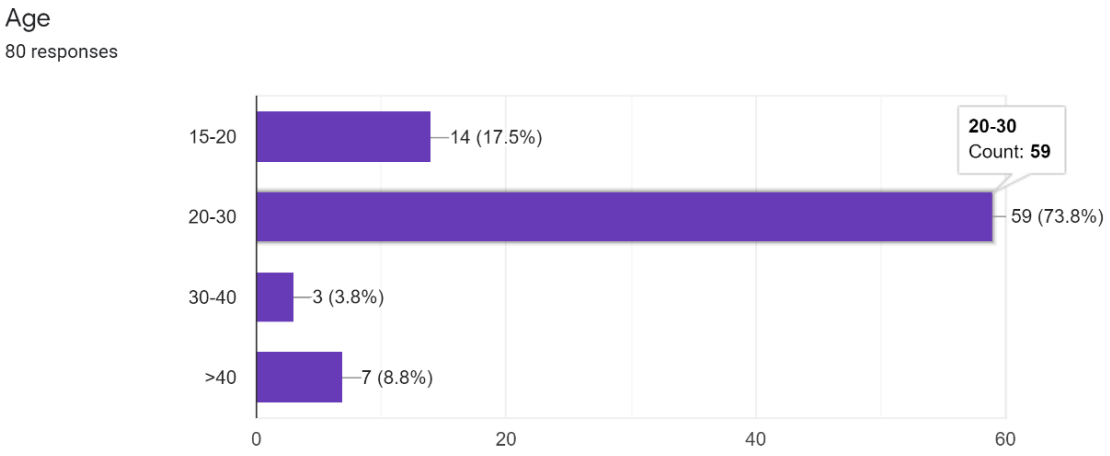

Table 1
Age analysis of Respondents

Age Category	Percentage
15 - 20	16.80
20 – 30	71.08
30 – 40	3.61
>40	8.43
Total	100

It can be noticed from Table No. 1 that 71.08 percentage of the respondents are related to 20-30 age category, followed by 16.80 percentage of the respondents in the age group of 15-20, 8.43 percentage in above 40 and 3.61 percentage in the 30-40 age group. Hence it can be concluded that majority (71.08%) of the repondents are in the category of 20-30.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the gender of the respondents. The gender classification of the respondents have been in Table No.2.

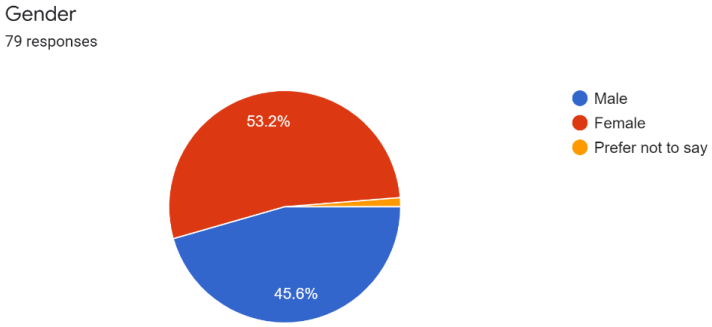

Table 2
Gender of Respondents

CHOICES	PERCENTAGES
Male	45.6
Female	53.2
Prefer not to say	1.2

It can be noticed from Table No. 2 that 53.2% of the respondents are Female and 45.6% are Male leaving the rest preferring not to say that means that the respondents are more women. The respondents are more male.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the professions of the respondents. The profession of the respondents have been in Table No.3.

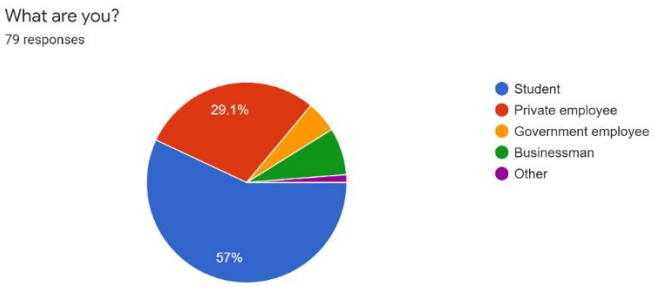

Table 3
Profession of Respondents

CHOICES	PERCENTAGES
Students	57
Private employees	29.1
Government employees	5
Businessman	5
Others	3.95

It can be noticed from Table No. 3 that highest being the students at 57% next being Private employees at 29.1% then Government employees and Businessmen at 5% each and lastly 3.95% being some others other than the above.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the Shopping preference of Respondents
The Shopping preference of Respondentshave been in Table No.4

Table 4
Shopping preference of Respondents

CHOICES	PERCENTAGES
Yes	89.9
No	5
May be	5.1

It can be noticed from Table No. 4 that they use Amazon to shop online or no in which 89.9% do prefer Amazon and 5.1% are not sure if they use it and 5% being not preferring Amazon while shopping online. We see that there is demand for Amazon while shopping online.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the professions of the respondents. The profession of the respondents have been in Table No.5

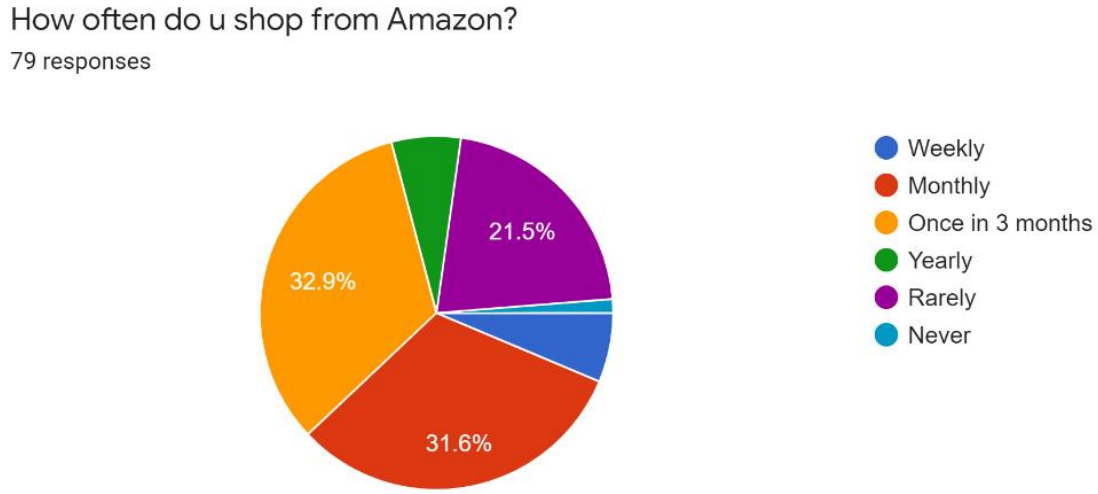

Table 5
Shopping behaviour of Respondents

BUYING BEHAVIOR	PERCENTAGES
Weekly	6
Monthly	31.6
Once in 3 months	32.9
Yearly	6
Rarely	21.5
Never	1

It can be noticed from Table No. 4 that the most frequently shopped time is ‘once is 3 months’ with 32.2% and then done monthly 31.2% The next highest is 21.1% that is ‘rarely’ that means they don’t often purchase online, then is ‘weekly’ and ‘yearly’ indicating 6%n each from the whole. 1% out of the respondents never bought anything ever. This means there is purchase happening for once in every 3 months and monthly on Amazon.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the professions of the respondents. The profession of the respondents have been in Table No.6.

Table 6
Offer given to Respondents

CHOICES	PERCENTAGES
Yes	70.9
No	29.1

It can be noticed from Table No. 4 tha 70.9% of them say they do get mails about mails and the rest 29.1% say they don't get any mails regarding the offers on Amazon. Amazon sends mails about its offers to its customers.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the professions of the respondents. The profession of the respondents have been in Table No.7

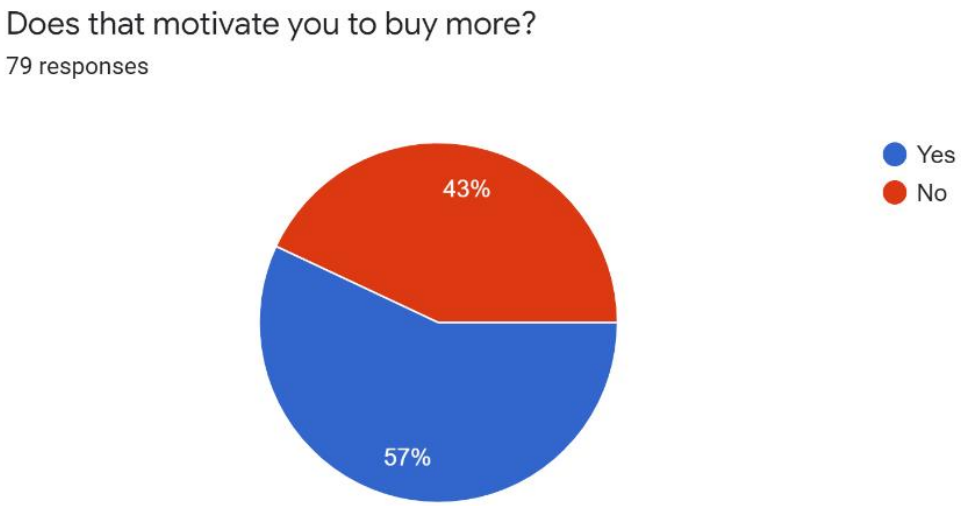

Table 7
Motivation level of respondents

Motivation level	PERCENTAGES
Yes	57
No	43

It can be noticed from Table No. 4 tha. 57% of them say they do get motivated and the rest 43% say they don't get motivated regarding the offers on Amazon. So, we can see that there is slight impact of these mails on customer purchase behavior

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the Repurchassing pattern of Respondents The have been in Table No.8

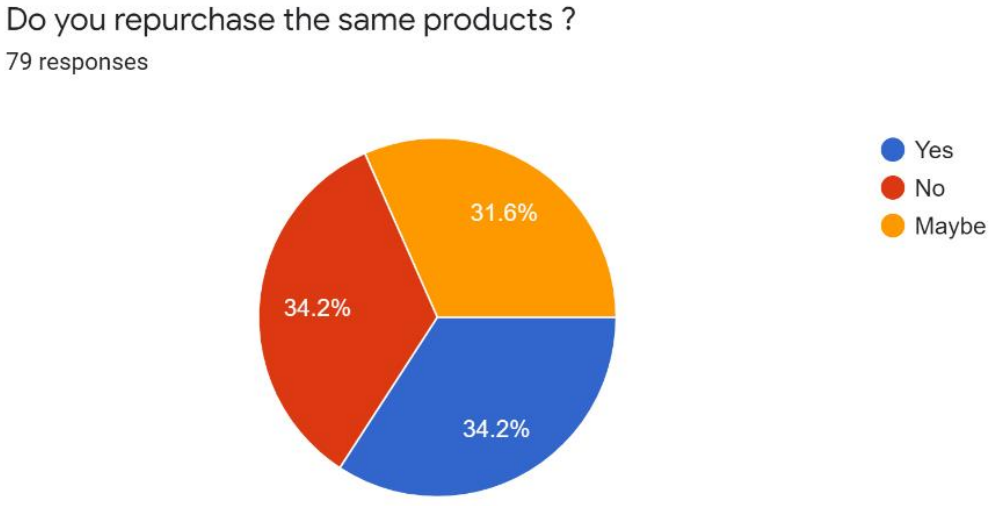

Table 8
Repurchassing pattern of Respondents

CHOICES	PERCENTAGES
Yes	34.2
No	34.2
May be	31.6

It can be noticed from Table No. 8 that 34.2% of them do purchase the products again and other 34.2% does not repurchase them. But the rest are not sure about it.

The responndets are not sure about the repurchase of same products.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the professions of the respondents. The Discount experience of Respondents have been in Table No.9

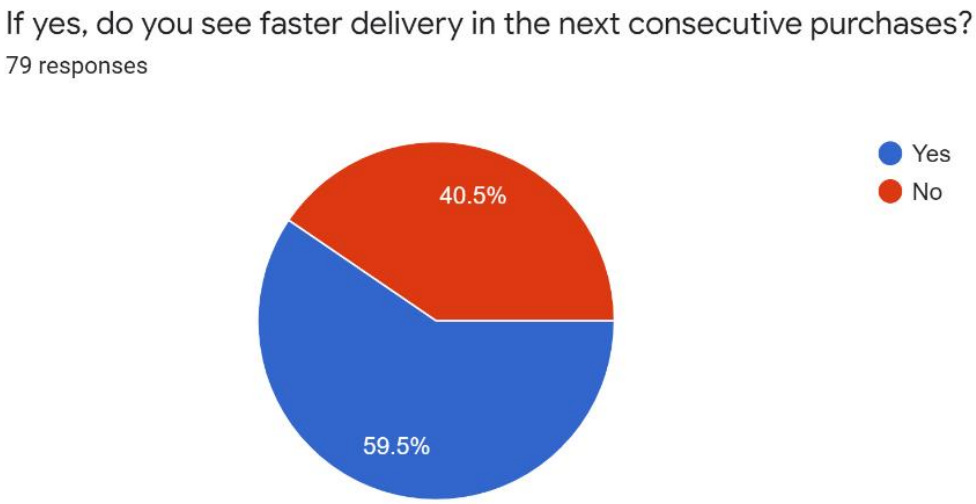

Table 9
Delivery pattern according to respondents

DELIVERY PATTERN	PERCENTAGES
Yes	59.5
No	40.5

It can be noticed from Table No. 9 that out of which 59.5% experience faster delivery and the rest 40.5% does not experience any change in the delivery speed. So we can see that there is faster delivery in the next consecutive purcheses.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the Discount experience of Respondents have been in Table No.10

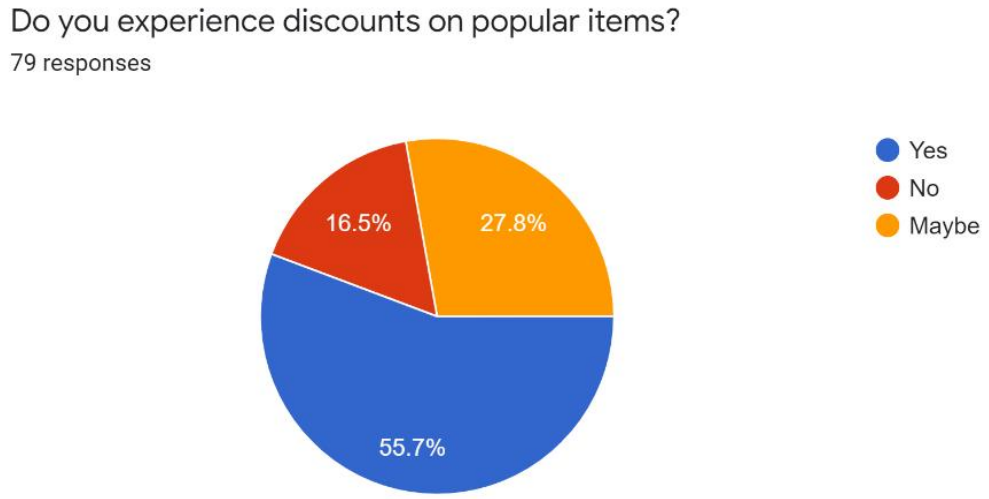

Table 10
Discount experience of Respondents

DISCOUNT EXPERIENCE	PERCENTAGES
Yes	55.7
No	16.5
May be	27.8

It can be noticed from Table No. 10 tha that respondents do experience discounts as 55.7% has responded with yes and 16.5% said they don't experience any changes in offers. The rest 27.8% is is not sure about the discounts.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the professions of the respondents. The Recommendations to Respondents have been in Table No.11

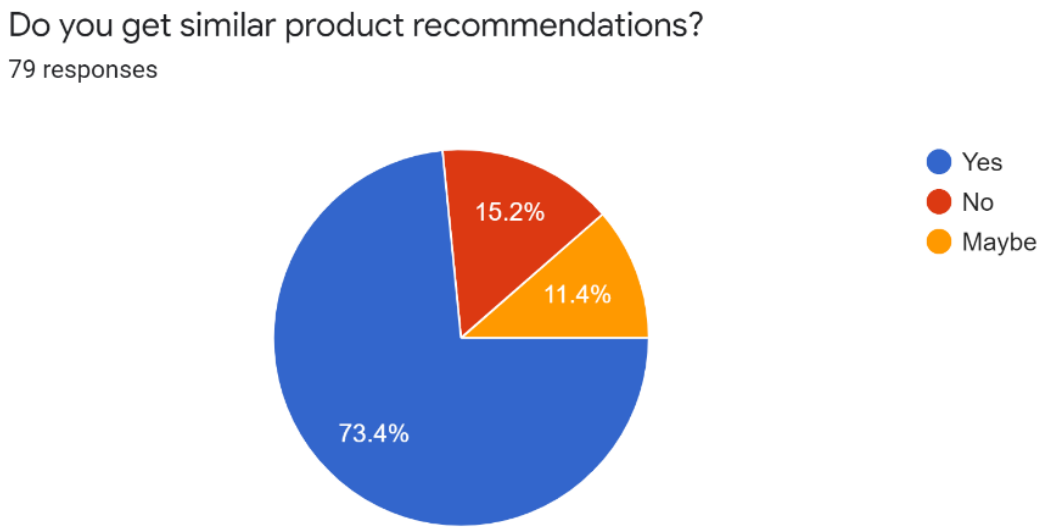

Table 11
Recommendations to Respondents

RECOMMENDATIONS	PERCENTAGES
Yes	73.4
No	15.2
May be	11.4

It can be noticed from Table No. 11 that get recommendations of similar products where 73.4% have responded that they do get recommendations and other 15.2% said they don't experience anything like that. Rest 11.4% are not sure if they get any recommendations.

The data collected were analysed using various statistical tools such as percentage and averages. The prime analysis of the data is on the Satisfaction of Respondents
The have been in Table No.12

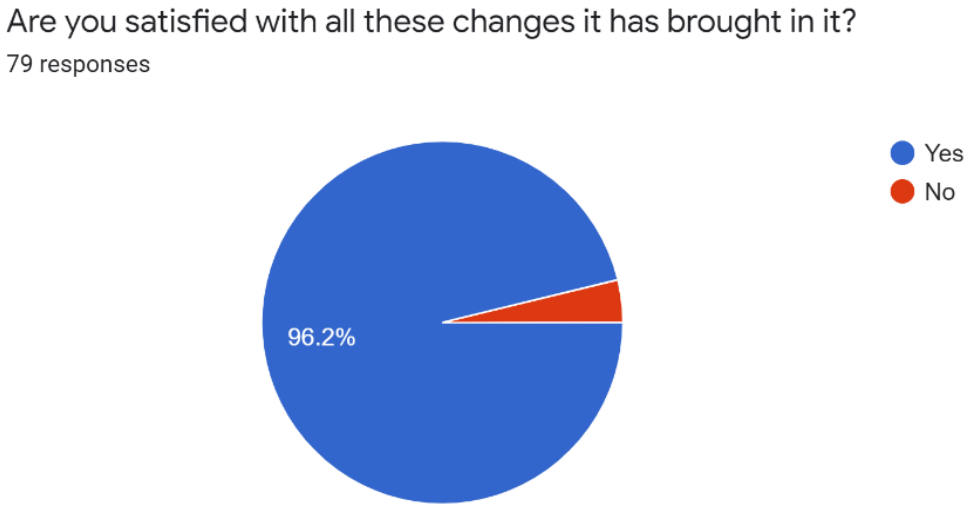

Table 12
Satisfaction of Respondents

SATISFACTION LEVEL	PERCENTAGES
Yes	90.2
No	9.8

It can be noticed from Table No. 4 tha 90.2% of the respondents have been satisfied with the changes but the rest 9.8% has not been satisfied with the changes.That means the customers are satisfied with changes.

FINDINGS

1. Majority (71.08%) of the repondents are in the category of 20-30.
2. The respondents are more male.
3. that highest being the students at 57%
4. That there is demand for Amazon while shopping online.
5. There is purchase happening for once in every 3 months and monthly on Amazon.
6. Amazon sends mails about its offers to its customers.
7. we can see that there is slight impact of these mails on customer purchase behavior
8. The respondents are not sure about the repurchase of same products
9. They make repurchases and it has made it easy to and does delivery faster in the next consecutive purchases.
10. It is observed that Amazon gives discounts on popular items to its customers.
11. The customers have high satisfaction on the changes brought in by Amazon.
12. The customers are satisfied with changes.

MANAGERIAL IMPLICATIONS

- Marketing can be more accurately targeted.
- Customer satisfaction can be increased.
- Customer behavior analysis.

CONCLUSIONS

According to the study its seen that data helps in customer satisfaction by giving high offers letting them know through mails. It makes its customers motivated to buy more that results in monthly purchases and buying once in 3 months that is a regular sale. The customers repurchase the items and there is evidently faster delivery for those consecutive purchases. This is done when data collects and stores the data which is then used by Artificial Intelligence in further stages. It is then found that it also helps in the product recommendations. On the whole data is helpful in satisfying the customers with relevant changes that it has brought.

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QUESTIONNAIRE

Age

15 – 20

20 – 30

30 – 40

>40

Gender

Male

Female

Prefer not to say

What are you ?

Student

Private employee

Governement employees

Businessmen

Other

Do you prefer Amazon for shopping online?

Yes

No

May be

How often do you shop from Amazon?

Weekly

Monthly

Once in 3 months

Yearly

Ra

Do you keep getting mails from Amazon about their offers?

Yes

No

Does that motivate you to buy more?

Yes

No

Do you repurchase the same product?

Yes

No

May be

If yes, do you see faster delivery in the next consecutive purchases?

Yes

No

Do you experience discount on popular items?

Yes

No

May be

Do you get similar product recommandations?

Yes

No

May be

Are you satisfied with all the changes it has brought in it?

Yes

No