Report on

E-commerce as a tool of expansion

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CERTIFICATE

This is to certify that the project report entitled **"E-commerce as a tool of expansion"** submitted by Mayank Mishra (2K18/MBA/702) and Priya Sheetal (2K18/MBA/742) in partial fulfillment for the award of Masters of Business Administration degree of USME, Delhi Technological University is a record of candidates' own work carried out by them under my supervision. The matter embodied in this project is original and has not been submitted for award of any other degree.

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DECLARATION

We, Priya Sheetal and Mayank Mishra, hereby declare that the Project report entitled **"E-commerce as a tool of expansion"** is an original piece of work carried out by us under the guidance and supervision of Dr. Gaganmeet Kaur Awal. The preparation of our project report is based on our personal finding, interaction with the students of Delhi University, Delhi Technological University and secondary sources. The matter embodied in this project is original and has not been submitted for award of any other degree.

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ABSTRACT

Now a days, Internet has become one-window for all the internet users in terms of searching for their day-to-day needs due to swift growth in the technology. For their small requirements like shoes to large appliances like refrigerator, they seek it on the internet. The variety or the product and huge number of people seeking them makes competition tighter between the e-commerce providers. In order to attract majority of the customer they have to stand out from their competitors. Referral marketing is another aspect which e-commerce platforms have been using to maximize their reach to prospect customers. They also make use of a technology to replace the offline mode of shopping such as using Augmented Reality based tools which is enhancing the online purchase experience. The study sought to determine the attributes which are important for customers; perception about the product reviews, referrals and incentives; user's perception about Augmented Reality (AR) tools during online purchase experience.

For studying the behavior primary data were collected from students of Delhi Technological University and Delhi University. Using convenience sampling technique 200 responses were collected to study their behavior. The primary data for this study was collected via questionnaires. . The quantitative data was analysed by descriptive statistics using SPSS. Factor analysis was done to find the most important factors and later we need Friedman's Test to find the most important important factors. Cross-tabulation analysis was used to show the relationship among different variables.

Index

List of Tables

List of Figures

1. Introduction

1.1. Background to the study

Advancement in technology have had a immense impact on the e-commerce world, it had transformed the way consumers get connected with brands and empowered them to shop more cost effectively. Driven by the convenience of products getting delivered to your doorstep, ecommerce has now become an integral part of everyday life. (www.Acquire.io)

“It’s the first inning. It might even be the first guys up at bat. We’re on the edge of golden age [of AI].” – Jeff Bezos CEO at Amazon

From how we live to how we work, AI plays a pivotal role in our day to day schedule. There are numerous examples of AI and the automation tools used are spam filters, voice to text features, smart personal assistants (Such as Siri, Alexa), personalisation of new feeds (www.nibusinessinfo.co.uk). In a research, it was found that 45% of millennials are already using this type of voice activated search for online shopping.

Apart from this, Augmented Reality based tools like 3D Try on are the next sensation in E- commerce world. Some are already integrating this features to give their customers better shopping experience. This not only helps the customer but the provider in terms of less churn and high profitability. For the earliest players it has given them competitive advantage over the rivals.

Along with this Referrals are playing a major role in attracting and retaining customers. It is a saying that, "Marketing is the most effective when it's not even clear that we are doing any". The best way marketer get their customers is through referral and there is high chances of conversion. A satisfied customer is most likely to recommend product or services to their friends, relatives, acquaintance and they do this not without getting paid. This is the reason why everyone trust their friend's reviews. That means having referral strategy helps the marketer to motivate their satisfied customers to take steps and recommend the products to their friends and relatives might benefit us in terms of expansion and thus revenues.

So, in our project we focuses on identifying features which consumers think are important to them and classify them according to their relative importance. This study also includes understanding the perception about the product reviews, referrals and incentives. We have also studied user's perception about Artificial Intelligence and Augmented Reality based tools which could potentially be the next sensation in E-commerce world.

1.2.Objectives

1. Identification of website features which are important to the customers and classify them according to their relative importance
2. Studying customers' preferences about the product reviews, referrals and incentives.
3. Analysing customers' perception about Artificial Intelligence and Augmented Reality based tools on e-commerce platforms.

1.3. Research Questions

1. Which website factors are most important to customers? Classify them according to their relative importance.
2. When are customers most likely to participate in referral programs? (for both, accepting referrals and referring it to their friends.)
3. When do customers mostly post reviews about the product they buy? Can incentivizing help in encouraging people to post reviews?
4. Do customers accept AI and AR based tools to assist them in online shopping?
5. Which incentive method is most preferable by the customers?

2. Literature Review

2.1. Chapter 1: E-commerce: The website and features

Information Technology (IT) has transformed how the businesses used to be carry out traditionally in the past. It has minimized the time and effort it took to do business by removing the bottlenecks and introducing easier ways, while focusing on the customers and their needs. As a result, E-commerce came into existence. “E-commerce or E-business means running any business online, with the help of the World Wide Web (WWW) and by using the information technology like Electronic Data Interchange (EDI). In simple terms, E-Commerce is doing business onto the internet. There is no single definition of E-Commerce, it generally refers to the commercial activities carried-out on or is supported by Electronic Communication.” [1]
E-commerce is: buying, selling or renting of goods or services using the internet, through exchange of data and money. [2]

In India, E-commerce has seen an unprecedented success with a rapid increase in internet adoption by people and availability of budget smartphones in the market. Earlier in India, entrepreneurs used the internet as a medium for matrimonial services, online recruitment process and travel-tourism related transactions. [2] But now almost every business has been trying to have an online presence. This is due to rapid adoption of online shopping among customers.

Part of the success can be attributed to increased use of smartphone services and internet. Studies show that 391 million people used internet through their mobile devices in India alone in the year 2018. And the numbers are expected to cross 500 million by 2023. It has led to rise in the social media penetration as well. A recent study suggests that over 25 percent of India's population has presence of at least on social media platforms. Facebook and WhatsApp has been the leading two major platforms. The social media reach has been expected to reach more than 35% by 2024. With such rapid

increase in internet adoption, the number of social media user-base is expected to reach more than 450 million by 2023. [3]

The online marketplace in India, is expected to cross $200 billion by the year 2026 from $38.5 billion in the year 2017. Much of this growth can be attributed to increasing internet adoption and ease of access to smartphones. Indian internet market is most likely to cross $250 billion by the end of year 2020, with majority of contribution coming from e-commerce. The revenue generated from e-commerce is also expected to cross $120 billion by the end of year 2020, growing with an annual CAGR of 51%. The recent global pandemic COVID19 may slow it down for the while. However India might still be able to achieve this milestone.
[4]

These figures attracts many big as well as small businesses to make use of the internet to do business. The micro, small & medium enterprises (MSMEs) in India has been one of the major beneficiaries of e-commerce. The seamless exchange of goods and service has provided a medium to them to reach larger population with very less resources. The Indian e-commerce has shown a rapid growth and studies suggests that India is expected to become second largest e-commerce market in coming 10 years, leaving behind the US and many other countries. Tech innovations like electronic payments, live tracking, AI based customer engagement, and etc. has lead this development and will continue to do so. India has also focused on startup developments by launching many attractive schemes like Make in India and Digital India. Make in India focusses on encouraging manufacturers to manufacture goods in India, reduce imports and increase exports, making India a leading manufacturing hub in the world. The Digital India movement focusses on encouraging Digital transformation of the economy. These movements have led to thousands of budding startups in the country. These startups will not only promote economic growth in the country but also provide employment opportunities to million other people.
From customers' perspective also, Ecommerce has many benefits, including but not limited to flexibility of ordering, secure payments, convenient deliveries and returns, etc.

These factors not only improves customer satisfaction but also helps the business to gain more competitive advantage over others. This led to the sudden rise of businesses opting for e-commerce channels for either selling a specialized product or selling multiple products. As a result, there is a race to lead the market and get maximum customers. This remains true especially for retail e-commerce platforms where products were same but retailers are different. In India, major players in this vertical are Flipkart and Amazon with 31.9% and 31.2 % market share respectively [5]. Along with the quality of the service they provide, a huge contribution to their success has been the web page designs and the features, which makes buying experience good for the customers. Therefore it is very important for any business to have a very sound and attractive online presence. It comes with the websites, the contents, digital campaigns, advertisements, reviews, etc. These are discussed below in brief.

Following are the factors that should be well concentrated to make a good webpage to attract customers:

i.Visibility

Website should be good enough to be paged when a user search for any related queries. Thus, it is important to keep a track of useful keywords and have a better page rank to be shown in the first page.

ii. Accessibility

It is one of the most important aspect of making any website successful, by making the website easily accessed by an average user even if he does not have sound technical knowledge of the webpages, so they might need things simplified to their level of understanding. Every activity like searching, sorting, comparing, and checking out should be made as simple as possible for users.

iii.Aesthetics

Another important aspect is the aesthetics or the look of the portal. It is important to have good content on the website, but the presentation of those contents is even more

important. Even if your ecommerce platform has plenty of products to offer, but if they are not organized properly, the customer might not be able to find what he is looking for and ultimately close the web page and switch to other providers. To increase his involvement, your page should be attractive and

iv.Loading Speed

Website loading speed is another major factor for any successful website. Even if you have a wonderful website with all latest technologies involved to make it interactive to people, if the page doesn't load quickly, users will get frustrated and leave. They will most likely exit your web page and might never come back, causing your business to miss their potential value contribution.

v.Content

Regardless of whether your web page works quite well, opens effectively, loads quickly, and looks incredible, they despite everything the web page be useful to users if the content on your site is not useful. For any ecommerce based business site the item depiction and the manner in which they are organized are significant for the client. Ensure al the items are very well placed, into suitable categories if possible, and is easy to browse through.

vi.Description

Selling without product description won't work. The product description should include all the significant information that a customer should know before making the purchase. Some of the most sought after information by customers in product description section are:

- Product specifications
- Manual to operate,
- Maintenance procedures,
- Warranty information,
- Terms and conditions.

vii. Contact Info

For any web based business it is extremely fundamental to give a channel through which clients can raise their issues and concerns. Subsequently it is essential to make it plainly noticeable to the clients to show that we are constantly here to determine their questions. Make sure the contact or help button is visible and accessible by users without much of effort. Putting the help button on all the pages could be helpful as it assures the visitor that you are there to help whenever they need it.

viii. Smartphone Friendly Interface

Many users admit that they use their mobile phones most of the time for making any purchase online. Therefore the portal should have a mobile friendly interface as well or alternatively have an Android or iOS application or both the app and mobile friendly webpage. Some ecommerce platforms have tried to go App-only in the past but it backlashed, so it's better to have web browser support even if you have an app for your business.

Apart from these factors there could be other factors as well based on the nature of the business the platform deals in.

For all these websites it is very important to be attractive to their customers and stay relevant even with technology and trend changes. To stay relevant these platforms have to keep on updating and incorporating changes as per customers' requirement. Therefore it becomes very essential to know what their customer wants, what customer likes and dislikes, what motivates and demotivates the customer from using e-commerce platforms.

Like every other website, these platforms also perform website audit to check their website's performance and measure it on suitable scales, which help them in improving the website. Websites add, delete or modify features based on customer's requirement.

They take customers' feedback and incorporate changes so that they can attract new customers while trying to retain the existing ones.

2.2. Chapter 2: E-Referrals

Referrals is circulating the word whether it is good or bad about a product or service with the help of the existing customers of the business instead of using the traditional advertising. These referrals mainly happen voluntarily but these changes by influenced by the business with the help of good marketing strategies.

Every company desire to have positive WOM about their product and services and this act as a tool which influence the customers. Therefore are two main reasons for this which have been mentioned below:

i) WOM by any friend, relatives or acquaintance holds comparatively better credibility as compared to any a paid advertisements or promotion by the companies themselves (Day, 1971). "Smith and Swinyard (1982)" had created a model to investigate the effects of advertising compared to the direct product experience and it was found that the direct product experience is more reliable . Therefore, it's more credible that influence of a person who is having experience with the product than mere advertisement. [6]

ii) ii) The huge media expenditures is not needed at the time of WOM as we need them at time of advertisement. By underpinning the significance of WOM, the role of paid advertisements is declining in terms of influencing purchase decisions of the consumers (Godes *et al.*, 2005). The advertising effectiveness has been hampered by immense number of advertise the messages from the company which directly or indirectly creates a negative impact in the mind of customers. (James R. Coyle, Miami University)

As a component of E-referral activity, equity theory explain that when incentives are provided both to the receiver as well as the sender it affects the decision making activity to some extent. Instinctively, people may think that the one who is referring only thinks about his incentives irrespective of the receiving one, but the equity theory suggests them otherwise. In general, "equity theory can be described as the proposition that individual seeks equity in whatever they give and receive (Walster *et al.*, 1973)". Therefore, the sender may think that the incentives should not be provided to him but as well as to the receiver for the effort they made while downloading them or purchasing

them. Equity mainly exists when both of them receive the same incentives like Rs. 200 each of them. Inequity exists when both the parties get different incentives. For example, when the sender receives Rs.200 but the receiver receives only Rs.150 then, there is positive inequity for the sender but when sender receives Rs.150 but the receiver receives Rs. 200 then there is negative inequity for the sender.

"A perception of person of the equity in a relationship may be altered depending on the assessment of value and relevance of other participants' inputs and outputs"-(Walster*etal.*,1973).In the E-referral, the sum of efforts that was required to take action by sender or the receiver. Sender's attempts of telling their friends and acquaintance about the product or service is their input and the actual purchase of the referred product or service or the app downloading the input of the receivers. The output is the financial incentive which is being provided to the sender or the receiver or utility of the product by the receiver. By referring to the previous example, it is expected that if the sender get positive inequity he will more motivated as compared to when sender get negative inequity.

We all know that, whether it's a newly open restaurant in the market, newly released movie, or a newly launched product in this market, we always prefer whatever our close ones suggest. The same way, the consumers share their experiences and stories to our closed ones, expecting from their contacts to try out the products and brands they suggest and referred to them. The same thing happens in case of our e-commerce app. The existing customers will be acting as the brand ambassador of the product - referring the app to other prospects for using it.

Since our purchase decisions are mostly based on other's opinions. Therefore, the first preference of all brand for marketing is referral marketing tactics.Many E-commerce companies are using this in-app referral methods to attract the new customers and increase their brand awareness, whilst satisfying the existing customer base's needs. (www.the next scoop.com).

In following ways referral marketing can help the e-commerce app success to become the medium between product and target audience:

1. For the success of any E-commerce app, the following mentioned below point are significant:

a. Generation of more traffic in the application

Generally, any company would find it really difficult to keep a balance between maintaining relationship with the existing customer and acquiring the new customers for increasing the customer base. Here, In-app referral programs makes it easier by offering incentives to the existing customers for referring the app to their friends and relatives incentives. By doing this, both the parties feel compulsion to use the app and enjoy the associated benefits.

Apart from this, discounts available only on app directs the users for giving preferences to e-commerce application than the other means available. As a result, it attracts more traffic.

b. Recognition in the market

The app gets socially proven when the existing customers make the recommendations for app to others. The users who are referred starts getting confidence in the app and there are high chances of acquisition from prospects to leads. Along with this, referral technique when being accompanied by push notifications, social marketing and App Store Optimisation, can help in gaining attention of more number of prospects.

c. Aid in searching the influencers

Referrals method not only helps in increasing the active users, but it also aids in searching for the true influencer who regularly forward referral, or the presence of these influencers is giant on social media platform and can catalyst the marketing.

d. Increased customer loyalty

By the help of this method, marketers creates the feeling of bring valued in the mind of the existing customers and direct them to stick to the app forever. More importantly, when the customers realize that both of them i.e., their friend and they are rewarded, they get emotional attachment with that app.

e. Impact on customer reviews

With the help of this system, marketers can motivate their existing consumers to rate their app or give their reviews because these two have a very great impact on the app ranking in the app store, it can easily get a better rank because of having good reviews from their customers. And, marketers can use this opportunity in gaining attention of those customers who check the reviews posted before using this application.

2. The usage of Referral marketing method by the distinct E-commerce companies

Many companies not only in this industry but also in other industries, are using Referral marketing incentives for promoting their application to new customers and get more ROI. For example: When user install Phone app for the first time, app provides Rs.50 joining bonus to its users. Now, He/She forward their referral link to their contacts and can receives additional Rs.50 referral bonus when the application (referred by them) is installed on their contact's devices. Thereafter, the refree can redeem that wallet balance while making payments via Phonepe app, provided that the referred contact have already made their first payment from this app.

3. The best strategy for Referral marketing can be developed in following ways:

The best way to attract the new customers with the help of the existing customers is the in-app referral marketing. It reduces the efforts of gaining attention of users and providing more space to target on giving a better experience when utilized properly.

To make sure that marketer's in-app referral program helps in increasing the engagement with the customers and work as an aide in their success of applications, the following pointers mentioned below while making strategy:

a. Valuing the users

While developing in-app referral strategy, marketer must be clear that thd users should receive some valuable for sharing.. And if they didn't receive anything in return which they desire, they won't be motivated to share them.

b. Target the correct prospects

For a susuccessful marketing campaign, find those customer who would love the services that marketer will offer in their referral program. Targetinh those people who are good in convincing their friends to join this.

c. Searching the right influencers

By searching the consumer group who are very much active on social media platform can act as a valuable asset for the business. Because when that influencer promotes the app, chances are high to get attention of more number of people

d. The perfect reward should be given

Since early time, there was always give and take relationships, if we want to have long tern relations. Similarly here also if bonuses will be provided to the customers then only they will refer the app to others. For example, marketer can give some cash backs or gift cards on referral, offer premium memberships, deliver bilateral benefits, or avail personalized referral codes.

e. Add gamification

Whether someone is child or adult, all of them love playing game and gaming is the best way to engage the customer. Attaching some games the in-app referral program which which can help the marketer to keep them engage with the app and can easily convince them to try it at least once.

f. Target them at right time

Marketer should show the referral message at the highest time of user engagement by doing this, they can get the best of this marketing strategy. This will surely maximize the probability of getting positive response.

g. Authorise sharing over social media

Users enjoy sharing about their experiences over their social media handles. Allowing the customers to share the referral code and experience they get from that app to their contact or directly to the contacts, can help reach more people, giving more chances of success.

h. Promote carefully

To increase the possibility of successful referrals and the number of referrals sent by the existing users to their contacts, promotion of program should be done well considering all aspects. Push notifications or integrating application start button on the website for ease of access, are very helpful to direct users to the app. Apart from this, personalised emails to the customers about new offers and suggested products have also been

successful in increasing customer engagement. Attaching referral program to the E-commerce app can be the best thing to sculpt one's path to the success.

i. Re-engage the users

The utmost aim of a marketer is to encourage the users for using this method repeatedly. For acgithis goal, the marketer send the customers an appreciation message or email every time they refer the app to their contacts. In addition to this, tempt them to use the in-app referral program again.

Referral marketing are much better than affiliate marketing, paid advertising, content marketing because of the following reasons:

1. Referrals from close ones are trustworthy - The referrals usually comes from the existing customers who had experienced that product or services and are generally provided to those, who the customer trusts (it goes both way). And visitors who came from referral take an action and their engagement level is high and are motivated as compared to others.
2. Less initial and ongoing cost - The amount invested in purchasing or developing an e-referral strategy is comparatively less. And the moment it is built, the only real cost are any of the incentives one reward referrers with.
3. More attention on giving additional value to existing customers - E-referrals allows marketer to spend the saved money on the existing customers because a happy customers will be going to give you more leads. By using other marketing approaches, marketer not only have to pay commission on advertisement but also had to spend money on retaining customers.
4. Existing Customers are more likely to know other people with similar needs - Sometimes it's really very tough to reach out to the target audience and sell our products to them. Most of the people who use a certain kind of products and services have associations with other people with similar needs. The satisfied customers are most likely to spread positive words and might even recommend others to buy the same products.

2.3. Chapter 3: AI and AR tools in e-commerce

One of the main reason why E-commerce become so successful is because it makes shopping easy, secure and fun. The flexibility provided by online shopping portals has been helpful specially to working people who often do not have enough time to go out to the stores, therefore they find online shopping more convenient. The product variety available on online shopping portals is also huge, which offers customers many alternatives to choose from that too at comparatively lower price, contrary to nearby physical stores that only has 2-3 options at max and usually selling at maximum retail price. This again makes online shopping a good choice for people looking for other alternatives than those available in nearby stores. These reasons collectively make e-commerce very popular in India. In fact many marketing research consultants state that ecommerce has grown multifold faster than they had expected, and that it will share a huge portion in the nation's future economy, as we discussed in section 1 of the study.

However, online shopping still cannot fully replace physical store shopping, especially for products that requires judgement by touching and feeling, like in clothes, shoes, jewelry items, accessories and furniture. For such products, some sort of one to one interaction between seller and buyer is important as it lets customer discover various product attributes like smell, texture, appearance, fitness of use, working, etc. before they can even buy it. Usually customer first judge the product on these attributes and once he feels that he has found what he was looking for, he only then makes a purchase.

For example, when you buy a clothing wear in a physical store, you try the outfit out before you can decide what you want to buy. But unfortunately, this type of interaction is very difficult (or probably next to impossible), to implement on an e-commerce platforms.

As a result, many online shoppers, shopping for clothing, accessories and shoes, are often unhappy with their purchase when it is delivered, because of the mismatch between their expectation and the actual product. It happens due the lack of interaction which is missing on online shopping sites. Product images and videos have been a little

helpful for some people but still a majority of the people thinks that products looks good on model shown in the ads but does not suite them most of the time. [7]

So, is there any technology which could help us with such problem?

AI and AR are probably the best fit for addressing these problem in an online world. It is due their potential to learn and improve to give prompt action. Let us look at how AI and AR can be used to solve the aforementioned problems:

- AI can help in learning more about the customer and make hyper-personalized recommendations.
- With AR, people can see how the products would look like even before the purchase is made.

This would help people make better choice, a memorable shopping experience and ultimately more satisfaction.

WHY AI AND AR?

"A recent study suggests that by the end of year 2020, more than 15 percent of customer service interactions will be based on AI systems only. Augmented reality will be adopted in more than 20 percent of large enterprises as a part of their digital transformation strategy."

A recent study suggests that more than 90% of the consumer interaction would be automated by 2021. It will help in better customer service and systematic response to the customer, simultaneously giving feedback to the systems. These data would then be analyzed to generate useful insights to know what customers want. Some of the big players have already started using such systems like Facebook has 3-D virtual photos feature, FaceApp which took the market with a storm uses AI algorithms to give possible aged output to a current image, etc. Similarly other organizations have also shown interests in using artificial intelligence as their new capability.

How can they be used?

Let’s understand what these technologies are, where are they currently being used and how they have been proved helpful. Learning from their current application we can think of more alternative areas where they can be helpful. Some of them we have listed in this section but the list is not exhaustive.

Artificial Intelligence (AI)

"AI can be defined as a system's ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation.” [8]

It is an attempt to mimic human intelligence by making a system able to

- Learn – real world phenomena
- Act – On given challenges,
- Adapt – when sense a change

Current applications: Netflix uses machine learning based recommender engine to learn what user might be interested in watching and then recommends it to users. It keeps on learning and improving based on what user watches.

Augmented Reality (AR)

“Augmented reality (**AR**) is an interactive experience of a real-world environment where the objects of the real world are enhanced by computer-generated virtual environment. AR can be defined as a virtual system that has three basic features: a combination of real and virtual worlds, capable real-time interaction, and accurate 3D replication of virtual and real objects.” [9]

In context of e-commerce, Augmented Reality allows customers to preview products or experience services in their normal lives before actually purchasing. Using Augmented Reality, customers can preview products and be more likely to pick the best alternative from a wide range of product the first time. But how? Augmented reality creates a virtual version of environment to make things more detailed and more appealing to user. For example, if you want to know what color would look good on the walls of your

room, an AR system can create a virtual painted version of the wall to let you see how it would look in your room after using the same color scheme.[10]

Some of the current famous AR applications:

1. Pokémon Go uses AR to give their game a virtual surrounding environment which is more appealing to users than a plain 2D game.
2. Facebook let's its user post AR photos on their timeline, however it has not yet seen in advertising channel named Facebook market.
3. Lenskart uses 3D try on (made by DITTO^{TM}) feature to give a 180degree realistic virtual trial of their frames.

There is another technology which can also be helpful: Virtual reality (VR). VR tools make similar virtual environment to user but the only limitation here is that the user then can't see the real environment as he has to wear a VR device to get VR experience. Augmented reality is basically an integration of the VR and actual environment i.e. user can see a virtual medium on a screen and access it without wearing any VR headset, and in that way he still is conscious of his real environment as well. AR was developed as a solution for one of the main shortcomings of VR i.e. when using VR the user lose senses of the actual physical world. At some places that is what people require, like in the gaming and movies etc. but it didn't work that well on e-commerce portals. Another reason why we are not covering VR in this study is because the usefulness of VR would be limited to those having VR devices which are pretty costly as well. So for this study we will focus on AI and AR based application only.

Taking a similar approach, the two potential tool we suggest of using in E-commerce:

1. Artificial Intelligence (AI) based recommendation system for buying clothes.

   The need of the hour for any retailer is to find out what his customer wants. Now, not all the customers have same needs, and every customer has unique taste and preference, thus it becomes essential to tailor down the offerings as per the

requirement. In some cases hyper personalization at individual customer level might not be possible, even then we need to divide our customer base into certain clusters based on common needs, and then make product variants to serve them. But for all these capturing strategies we would require a lot of analysis and insight generation. Here AI systems can be helpful, to analyze data and take suitable action.

The tool will capture user related data from various sources like browser cookies, IOT devices, searched keywords, etc., which stores information about customers' past online behavior on the website and match their explicit and implied preferences with server's database, which carries recommendations from stylists. This would help the provider give more accurate recommendation which a customer is most likely to buy, and it helps the customer to pick best suitable clothes for themselves.

2. AR based 3D try on feature for online clothes shopping

The tool will provide the users a virtual trial platform to see what the clothes will look on them even before they make the purchase. The tool captures user image and based on their body shape it breaks the image into Euclidean coordinates which translates into a virtual medium where the selected dress can be put on to see how it looks on them.

Not just the clothes, such systems can be used to try Shoes, Jewelry, Accessories and other similar articles. AR can assist the e-commerce in all such situations where customers can use a virtual view to help make their purchase decision. It would help both the customer and the seller.

3. Other areas where we can use AI/AR can be used in online world:
    a. Interacting with patients and prescribing suitable medicine. (can be used where the illness is judged as non-life threatening)
    b. Diagnosing illness by taking user symptoms.
    c. Try on for shoes, jewelry and accessories.
    d. A virtual media to see home décor items.

Similarly, there could be a number of applications of AI and AR in e-commerce world but for the purpose of studying the acceptance level among users we will focus on the first two options. We will focus on gathering customers' perception about these features and whether or not they would like to see such a tools in e-commerce.

2.4. Chapter 4: Recommendation Systems

"It is system that suggests products, services, information to users based on analysis of data. Notwithstanding, the recommendation can derive from various factors such as the history of the user and the behavior of similar users"-(www.medium.com)

Collaborative filtering is the most famous techniques for generating the recommendation . In collaborative filtering the recommendations are based on the products chosen by other people of similar preference. It basically filters the item by the opinion of others by identifying a cluster of customers having alike preferences and taste. For example- If Ram likes 3 web series- Panchayat, Kota factory, Cubicles and Shyam (and some more people having similar interests) likes 3 web series- Kota factory, Cubicles, Pitchers, then they have almost same interest. By this, we can say with some certainty that Ram may like Pitchers and Shyam might like Panchayat(Analytics Vidhya.com).

More specifically, it is a process which involves three stages:

i. Determining similarity in preference of current users with others;
ii. Choosing a subset of collaborative users based on the proximity in the preferences. (similarity coefficients computed in Step 1);
iii. Presenting recommendations based on choices of other users in the subset.

Another widely used method is **Data Mining**. "Data Mining is defined as a non-trivial process of extracting potentially useful, interesting, and actionable information from massive databases"- [Frawley et al., 1991].

Some of the data mining methods which are used for generating the recommendation include:

- association rule mining
- web mining
- clustering
- or a combination of them.

Information retrieval method is another useful method for recommendations generation. There are many shopping assistants (Deal Time – www.dealtime.com; Shopping.com – www.shopping.com; Epinions – www.epinions.com) that are based on information retrieval-based methods. These shopping assistants gives agent-based shopping support to the customers. They ask for a set of input product features, and match them against the database of various products on the Internet and gives an output set that matches with customer's interest. [Mohanty & Bhasker, 2005]. Some of the shopping assistants look at the significance of product features in addition to the feature itself to select products of interest to the customers.

In simple words, the shopping assistants use a set of input product features, and match them against the database of various products on the Internet and gives an output set that matches with customer's interest. The recommendations generated here are usually the product variants and not cross category products as recommended in collaborative filtering-based methods.

Recommender systems are being used by the E-commerce websites

- to offer right products to the right customers,
- stay relevant to the customer, and
- identify up-sell and cross sell opportunities from the customers.

Essentially, recommender systems help e-commerce sites in earning more revenue for their site.

Recommender systems reduce the overabudance of information issue on the web by offering products which attracts the customers. As of now such tools are being used widely in the fields of clothing, books, retail, music and entertainment websites and so on.

3. RESEARCH METHODOLOGY

3.1.Introduction

This section focuses on the research methodology used in the study including the research design, the targeted population, sample design and the data collection method. The collected data then will be analyzed to generate important insights.

3.2.Research Design

This study uses exploratory research. Some visual aids like charts and graphs have also been used to help the reader in understanding the contents of the data collected and thus offer more clarity on E-commerce and E-referral and give a better understanding of the of e-commerce website features which are important to the consumers; understand users' views about the product reviews, referrals and incentives; analyzing user's perception about Artificial Intelligence and Augmented Reality based tools in the e-commerce world.

3.3.Population of the study

The study is about knowing the views of e-commerce users. Therefore all the people who uses e-commerce portals very often are targeted population. However, for the study we have only taken current and former students of Delhi University and Delhi Technological University due to the background diversity and exposure to e-commerce and internet. Also, students are most likely to be influenced using referrals therefore it makes them ideal for such analysis.

3.4. Sample Design

Convenience sampling technique was used to select the units for study. 200 students of current and former students of DU and DTU were invited as the study sample which represents the customers who use e-commerce platforms very often. This sample was taken as per convenience because of pandemic coronavirus, it was difficult to approach the respondents in this lock down period. Therefore, we approached those students whom we could reach out to without much hassle.

3.5. Data Collection

The research made use of primary data which was collected by using structured questionnaires distributed to the 200 respondents using online surveying method. The questionnaire was surveyed and response were recorded using google form by using. To

distribute the questionnaire to the sample population social media platforms and emails were used. The questionnaire consisted of detailed questions which helps the respondents understand the questions and their meanings clearly and guides through filling of the questionnaire and probe them for more information.

4. ANALYSIS AND RESULTS

The objectives of this study were identification of features which consumers think that are important to them; perception about the product reviews, referrals and incentives; analyzing user's perception about Artificial Intelligence and Augmented Reality based tools during online purchase experience. For this we collected primary data from 200 respondents. The analysis is done on the data collected, result of which are presented below. Tables, graphs and charts were used wherever required, the interpretations of which has also been mentioned thereafter.

4.1. Demographic information

Below are information of the respondents who were involved in the study with regards to their age, gender, family income, education details. The demographic information points at the respondent's suitability in answering the questions.

4.1.1. Distribution of respondents by Gender

Out of 200 respondents: 102 respondents were male and remaining 98 were female.

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	102	51.0	51.0	51.0
	Female	98	49.0	49.0	100.0
	Total	200	100.0	100.0	

Table 1.1: Distribution of respondents by Gender

4.1.2. Distribution of respondents by Age Group

Based on the respondents' age group:

15 people were from age group 15-20, maximum were from age group 20-25 i.e. 135, 46 were from age group 25-30 and only 4 were from age group 30+.

AGE				
	Frequency	Percent	Valid Percent	Cumulative Percent
15-20	15	7.5	7.5	7.5
20-25	135	67.5	67.5	75.0
25-30	46	23.0	23.0	98.0
30+	4	2.0	2.0	100.0
Total	200	100.0	100.0	

Table 1.2: Distribution of respondents by Age

4.1.3. Distribution of respondents by family income level

Out of 200, 59 respondents have annual income less than 3 lakhs ; 59 respondents have annual income between 3 to 5 lakhs; 39 respondents have family annual income between 5 to 8 lakhs; 25 respondents have family annual income between 8 to 10 lakhs and 18 respondents have family income more than 10 lakhs.

ANNUAL_INCOME				
	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 3 Lakhs	59	29.5	29.5	29.5
3-5 Lakh	59	29.5	29.5	59.0
5-8 Lakh	39	19.5	19.5	78.5
8-10 Lakh	25	12.5	12.5	91.0
Above 10 Lakh	18	9.0	9.0	100.0
Total	200	100.0	100.0	

Table 1.3: Distribution of respondents by Annual Income

4.1.4. Distribution of respondents by employment status

The employment status were analyzed to divide respondents based on it.

Based on employment status the distribution is as following

Emp_Stat					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unemployed	13	6.5	6.5	6.5
	Student	96	48.0	48.0	54.5
	Salaried	79	39.5	39.5	94.0
	Self-employed	12	6.0	6.0	100.0
	Total	200	100.0	100.0	

Table 1.5: Distribution of respondents by Employment status

Out of 200 respondents 96 were student, 79 were salaried, 12 were self-employed and 13 were unemployed.

4.1.5. Distribution of respondents by education level

The distribution of the respondents based on their education level shows that out of 200 respondents. Out of 200 responses, 77 were from UG courses and rest 123 were from PG courses.

EDUCATION LEVEL			
	Frequency	Percent	Cumulative Percent
UnderGraduate	77	38.5	38.5
PostGraduate	123	61.5	100.0
Total	200	100.0	

Table 1.5: Distribution of respondents by Education Level

4.2. E-commerce Website Important Factors

Identification of features which consumers think that are important to them and classify them according to their relative importance.

Research question one: Which website factors are most important to customers? Classify them according to their relative importance.

The first objective of the study was to determine the factors which are most important to customers.

Table 2.1 Descriptive Statistics of ecommerce website factors

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
Loading Speed	3.68	.582	200
Website Interface	3.38	.614	200
Security certificates	3.72	.553	200
Mobile browser support	3.46	.686	200
Search bar location & visibility	3.33	.710	200
Smartphone App (iOS/Android)	3.35	.706	200
Cascaded Product categories	3.29	.704	200
Recommendation Section	3.07	.747	200
Sorting options	3.28	.688	200
Result Filtering option	3.34	.739	200
Product Description	3.57	.646	200
Terms and Conditions	3.32	.837	200
Customer reviews	3.48	.679	200
Product Comparison	3.24	.791	200
Dashboard visibility	3.05	.816	200
Ease of locating Account options	3.14	.790	200
Zoom In/Out for photos	3.16	.908	200
Separate Cart and Wish list option	3.20	.902	200
Help/Support button visibility	3.14	.908	200
Response time for queries	3.15	1.014	200

Table 2.2: Correlation matrix of ecommerce website factors

Correlation Matrix																				
	Loading Speed	Website Interface	Security certificates	Mobile browser support	Search bar location & visibility	Smartphone Application (iOS/Android)	Cascaded Product categories	Recommendation Section	Sorting options	Result Filtering option	Product Description	Terms & Conditions	Customer reviews	Product Comparison	Dashboard visibility	Ease of locating Account options	Zoom In/Out for photos	Separate Cart and Wish list option	Help/Support button visibility	Response time for queries
Loading Speed	1.000	0.426	0.199	0.329	0.220	0.050	0.076	0.121	0.212	0.215	0.202	0.139	0.246	0.255	0.200	0.131	0.161	0.266	0.114	0.206
Website Interface	0.426	1.000	0.202	0.279	0.345	0.113	0.190	0.226	0.258	0.272	0.330	0.300	0.288	0.204	0.126	0.169	0.110	0.080	0.228	0.089
Security certificates	0.199	0.202	1.000	0.477	0.203	0.279	0.261	0.158	0.237	0.260	0.411	0.426	0.362	0.399	0.352	0.161	0.199	0.226	0.210	0.173
Mobile browser support	0.329	0.279	0.477	1.000	0.289	0.172	0.271	0.281	0.229	0.303	0.313	0.349	0.246	0.261	0.268	0.272	0.290	0.234	0.236	0.201
Search bar location & visibility	0.220	0.345	0.203	0.289	1.000	0.253	0.494	0.373	0.386	0.296	0.358	0.380	0.340	0.216	0.321	0.249	0.248	0.171	0.263	0.157
Smartphone App (iOS/Android)	0.050	0.113	0.279	0.172	0.253	1.000	0.418	0.278	0.317	0.298	0.275	0.237	0.285	0.382	0.330	0.264	0.175	0.357	0.246	0.182
Cascaded Product categories	0.076	0.190	0.261	0.271	0.494	0.418	1.000	0.420	0.342	0.270	0.406	0.288	0.314	0.264	0.449	0.316	0.174	0.297	0.228	0.132
Recommendation Section	0.121	0.226	0.158	0.281	0.373	0.278	0.420	1.000	0.372	0.376	0.251	0.326	0.221	0.337	0.300	0.264	0.332	0.322	0.267	0.139
Sorting options	0.212	0.258	0.237	0.229	0.386	0.317	0.342	0.372	1.000	0.635	0.388	0.262	0.251	0.356	0.344	0.334	0.236	0.371	0.267	0.093
Result Filtering option	0.215	0.272	0.260	0.303	0.296	0.298	0.270	0.376	0.635	1.000	0.486	0.411	0.302	0.352	0.375	0.428	0.342	0.412	0.357	0.237
Product Description	0.202	0.330	0.411	0.313	0.358	0.275	0.406	0.251	0.388	0.486	1.000	0.565	0.519	0.372	0.390	0.405	0.287	0.339	0.353	0.219
Terms & Conditions	0.139	0.300	0.426	0.349	0.380	0.237	0.288	0.326	0.262	0.411	0.565	1.000	0.579	0.415	0.486	0.411	0.351	0.241	0.450	0.253
Customer reviews	0.246	0.288	0.362	0.246	0.340	0.285	0.314	0.221	0.251	0.302	0.519	0.579	1.000	0.516	0.405	0.353	0.279	0.213	0.340	0.322
Product Comparison	0.255	0.204	0.399	0.261	0.216	0.382	0.264	0.337	0.356	0.352	0.372	0.415	0.516	1.000	0.489	0.300	0.263	0.306	0.261	0.169
Dashboard visibility	0.200	0.126	0.352	0.268	0.321	0.330	0.449	0.300	0.344	0.375	0.390	0.486	0.405	0.489	1.000	0.466	0.302	0.377	0.425	0.289
Ease of locating Account options	0.131	0.169	0.161	0.272	0.249	0.264	0.316	0.264	0.334	0.428	0.405	0.411	0.353	0.300	0.466	1.000	0.348	0.363	0.253	0.188
Zoom Options	0.161	0.110	0.199	0.290	0.248	0.175	0.174	0.332	0.236	0.342	0.287	0.351	0.279	0.263	0.302	0.348	1.000	0.416	0.296	0.112
Separate Cart and Wish list option	0.266	0.080	0.226	0.234	0.171	0.357	0.297	0.322	0.371	0.412	0.339	0.241	0.213	0.306	0.377	0.363	0.416	1.000	0.229	0.204
Help/Support button visibility	0.114	0.228	0.210	0.236	0.263	0.246	0.228	0.267	0.267	0.357	0.353	0.450	0.340	0.261	0.425	0.253	0.296	0.229	1.000	0.409
Response time for queries	0.206	0.089	0.173	0.201	0.157	0.182	0.132	0.139	0.093	0.237	0.219	0.253	0.322	0.169	0.289	0.188	0.112	0.204	0.409	1.000

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.866
Bartlett's Test of Sphericity	Approx. Chi-Square	1397.981
	df	190
	Sig.	.000

Table 2.3: KMO and Bartlett's Test

KMO>0.5 and Significance <0.001 [TEST PASS]

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.675	33.377	33.377	6.675	33.377	33.377	2.661	13.303	13.303
2	1.420	7.101	40.479	1.420	7.101	40.479	2.546	12.730	26.032
3	1.301	6.507	46.986	1.301	6.507	46.986	2.420	12.098	38.131
4	1.154	5.768	52.753	1.154	5.768	52.753	2.261	11.304	49.435
5	1.061	5.305	58.058	1.061	5.305	58.058	1.725	8.623	58.058
6	.973	4.866	62.925						
7	.935	4.675	67.600						
8	.828	4.139	71.739						
9	.774	3.871	75.609						
10	.673	3.363	78.972						
11	.616	3.079	82.051						
12	.602	3.012	85.062						
13	.554	2.769	87.832						
14	.430	2.149	89.981						
15	.408	2.038	92.018						
16	.367	1.837	93.855						
17	.349	1.747	95.602						

18	.340	1.700	97.302						
19	.282	1.412	98.714						
20	.257	1.286	100.000						
Extraction Method: Principal Component Analysis.									

Table 2.4.: Total Variance Explained

>>THERE ARE 5 Factors that have EIGEN VALUE>1 and they explain 58.058% of the variance. Therefore there will be 5 factors in the output.

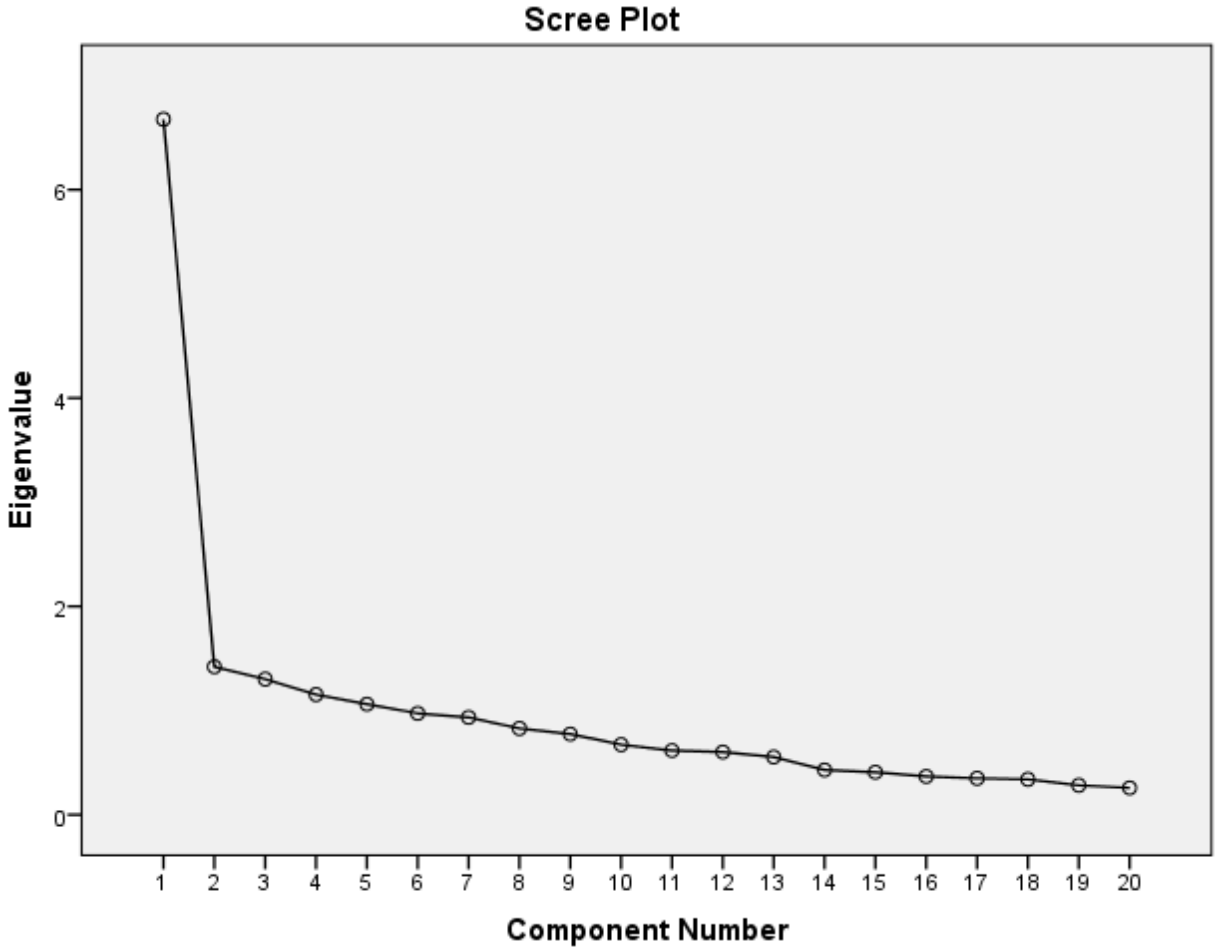

Figure 1: Screen Plot

>> There are 5 components with Eigen values above 1.0.

Component Matrix[a]					
	Component				
	1	2	3	4	5
Terms and Conditions	.706				
Product Description	.705				
Dashboard visibility	.687				
Result Filtering option	.677				
Customer reviews	.655				
Product Comparison	.631				-.352
Sorting options	.610		.374		
Ease of locating Account options	.594				
Cascaded Product categories	.584			-.483	
Search bar location & visibility	.571		.323	-.386	
Help/Support button visibility	.561		-.304		.451
Separate Cart and Wish list option	.557	-.336		.433	
Recommendation Section	.554				
Security certificates	.541				-.521
Mobile browser support	.537	.313			
Smartphone App (iOS/Android)	.515	-.341			
Zoom In/Out for photos	.514			.394	
Loading Speed	.381	.500	.373	.353	
Website Interface	.435	.493	.456		
Response time for queries	.394		-.400		.367

Table 2.5: Component Matrix

Extraction Method: Principal Component Analysis.

a. 5 components extracted.

Rotated Component Matrix[a]					
	Component				
	1	2	3	4	5
Separate Cart and Wishlist option	.775				
Result Filtering option	.627		.303		
Zoom In/Out for photos	.605				
Sorting options	.550		.485		
Ease of locating Account options	.501			.321	
Security certificates		.798			
Product Comparison	.300	.638			
Customer reviews		.528		.516	
Dashboard visibilty	.365	.440		.404	
Smartphone Application (iOS/Android)	.308	.429	.398		
Product Description		.423	.344	.375	
Cascaded Product categories		.306	.740		
Search bar location & visibility			.728		
Recommendation Section	.407		.546		
Help/Support button visibility				.732	
Response time for queries				.707	
Terms and Conditions		.458		.567	
Loading Speed					.762
Website Interface			.353		.728
Mobile browser support		.453			.467

Table 2.6: Rotated Component Matrix

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 8 iterations.

Component Transformation Matrix					
Component	1	2	3	4	5
1	.509	.505	.470	.442	.262
2	-.520	.224	-.311	.247	.722
3	.153	-.335	.414	-.585	.592
4	.658	-.261	-.657	.098	.239
5	-.114	-.717	.280	.626	.046
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					

Table 2.7: Component Transformation Matrix

>>There are at least one pair of formed components with correlation factor more than 0.5. Result are good to proceed.

>> Since there are 2 or more resulting factors with correlation of 0.5 or above, the result can be continued with the above rotation (Varimax rotation or Orthogonal rotation).

>> Results were not significant enough with Oblique rotation with correlation ranging near 0.3 only. That's why we used Varimax rotation.

Resultant factors from the variables taken

Component 1: **UTILITY**

VARIABLE	CORR COEF
Separate Cart and Wish list option	.775
Result Filtering option	.627
Zoom In/Out for photos	.605
Sorting options	.550
Ease of locating Account options	.501

Table 2.8: Resultant factors from the variables -utlity

Component 2: **Product Information/Comparison**

VARIABLE	CORR COEF
Security certificates	.798
Product Comparison	.638
Customer reviews	.528
Dashboard visibility	.440
Smartphone Application (iOS/Android)	.429
Product Description	.423

Table 2.9: Resultant factors from the variables -product information /comparison

Component 3: **ITEM SEARCH**

VARIABLE	CORR COEF
Cascaded Product categories	.740
Search bar location & visibility	.728
Recommendation Section	.546

Table 2.10: Resultant factors from the variables -item search

Component 4: **CUSTOMER SUPPORT**

VARIABLE	CORR COEF
Help/Support button visibility	.732
Response time for queries	.707
Terms and Conditions	.567

Table 2.11: Resultant factors from the variables -customer support

Component 5: **Accessibility**

VARIABLE	CORR COEF
Loading Speed	.762
Website Interface	.728
Mobile browser support	.467

Table 2.12: Resultant factors from the variables -accessibility

However, the result of factor analysis doesn't show the relative importance of all these variables or the factors. For that we have used Friedman's Test (equivalent to ANOVA test for non-parametric since here we have ordinal data) to rank the variables by sorting the mean ranking score obtained by these factors.

We have divided the factors into four categories Critical, Important, Neutral and Unimportant. The factors under these categories are mentioned in the table.

Ranks		
	Mean Rank	
Security certificates	13.47	CRITICAL
Loading Speed	13.05	
Product Description	12.41	
Customer reviews	11.72	
Mobile browser support	11.39	
Terms and Conditions	10.65	IMPORTANT
Website Interface	10.62	
Smartphone Application (iOS/Android)	10.59	
Result Filtering option	10.55	
Search bar location & visibility	10.42	
Cascaded Product categories	10.10	NEUTRAL
Response time for queries	10.00	
Sorting options	9.91	
Separate Cart and Wish list option	9.91	
Product Comparison	9.90	
Zoom In/Out for photos	9.71	
Help/Support button visibility	9.62	UNIMPORTAN
Ease of locating Account options	9.17	
Dashboard visibility	8.43	
Recommendation Section	8.41	

Table 2.13: Rank of various factors

4.3. Product reviews, referrals and incentives.

Research question two: When are customers most likely to participate in referral programs? (for both, accepting referrals and referring it to their friends.)

4.3.1. Respondents attitude towards installing an e-commerce app referred by a friend.

The respondents were asked under what referral scheme they will install an e-commerce app referred by a friend.

"I am likely to install an e commerce app referred by a friend"				
		Frequency	Percent	Cumulative Percent
Valid	If it gives you some bonus	44	22.0	22.0
	If it gives bonus to your friend only	38	19.0	41.0
	If it gives bonus both to you and your friend	118	59.0	100.0
	Total	200	100.0	

Table 3.1: Frequency Distribution of installing an app referred by a friend

Out of these 200 respondents,

- 44 respondents will install an e-commerce app referred by friend even if it gives some bonus to them only,
- 38 respondents will install an e-commerce app referred by friend even if it gives some bonus to the referee only
- 118 respondents will install an e-commerce app referred by friend only if it gives some bonus to both of them (for referring and for installing).

This clearly shows that hit rate of installing an e-commerce app referred by a friend is very if both of them are getting some reward to do so, hence this finding will help a marketer when they will be planning to launch a new e-commerce app and to use the referral marketing approach.

4.3.2.. Respondents attitude towards referring an e-commerce app to their friends.

The respondents were asked under what conditions they will refer an e-commerce app to their friends.

How likely are you to refer an app to your friends when					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	If it gives bonus to you only	43	21.5	21.5	21.5
	If it gives bonus to your friend only	39	19.5	19.5	41.0
	If it gives bonus both to you and your friend	118	59.0	59.0	100.0
	Total	200	100.0	100.0	

Table 3.2: Frequency Distribution of referring an app to a friend

Out of 200 respondents

- 43 respondents would refer an e-commerce app to their friends if at least he is getting a reward,
- 39 respondents would refer an e-commerce app to their friends even if at least his friend is getting a reward, and
- 118 respondents would refer an e-commerce app to their friends ONLY if it gives some bonus to both of them (for referring and for installing).

This clearly shows that be it referring an app or installing an app referred, users are most likely to do it when they and their friend, both get rewarded to do so.

This finding will help a marketer when they will be planning to launch a new e-commerce app and to use the referral marketing approach.

4.3.3. Relationship between Respondents attitude towards installing an app referred by a friend and Respondents attitude towards referring an app to friends

From the data collected by us, we tried to make a cross tabulation to analyze the relationship between respondents' attitude towards installing an app referred by a friend and respondents' attitude towards referring an app to a friend.

"I am likely to install an e commerce app referred by a friend" * How likely are you to refer an app to your friends when…; Cross tabulation					
Count					
		How likely are you to refer an app to your friends when			
		If it gives you some bonus	If it gives bonus to your friend only	If it gives bonus both to you and your friend	Total
"I am likely to install an e commerce app referred by a friend"	If it gives you some bonus	26	3	15	44
	If it gives bonus to your friend only	6	24	8	38
	If it gives bonus both to you and your friend	11	12	95	118
Total		43	39	118	200

Table 3.3: Relationship between respondents attitude towards installing and referring an app

The important result from this is:

- There are 26 respondents out of 200, who will install an e-commerce app referred by friend and will refer an app to their friends also, as long as they receive bonus;

- There are 24 respondents will install an e-commerce app referred by a friend and refer an app to their friends even if it gives some bonus to their friends only; but
- 95 respondents out of these 200 will install an app referred by friend and will refer an app to friends ONLY if they and their friends, both get bonus to do so.

This clearly shows that people are more likely to accept a referral and also refer the same to their friends when they both (referee and the target) get some incentives for the same. It means that the two party incentive scheme has better chances of success and it allows us to improve the clickthrough rate and hit-rate of the campaign as well as. So the main motive for an app referral or installation is incentives because majority of our respondents want that benefit.

Research question three: When do customers mostly post reviews about the product they buy? Can incentivizing help in encouraging people to post reviews?

4.3.4. Respondents attitude towards posting their reviews about the product they purchased.

Whenever we buy a product, a customer has a perceived value in his mind. The perceived value consist of all the factors that are important to a customer and their relative importance. The repeat purchase of any product or service depends on how satisfied the customer is during the whole process of purchase to consumption. Therefore it becomes very important to know if customers are liking our product or not and what do they like/dislike about it. Here customer reviews plays an essential role. It helps the seller to know what motivates and demotivates the customer, what changes should be made to get more customers, using the sentiment analysis of these reviews. It also helps potential customers to know other customers' experience. It is evident from studies that when a product has good review, chances of conversion is increased. As a seller, we would want maximum customers to review our products so that other consumers could read our review before making a purchase decision.

In our study, respondents were asked to mark their preferences towards giving their product reviews after every purchase they made.

Do you post product reviews post purchase?				
	Frequency	Percent	Valid Percent	Cumulative Percent
NO	125	62.5	62.5	62.5
YES	75	37.5	37.5	100.0
Total	200	100.0	100.0	

Table 4.1. Frequency distribution of posting product review post purchase

Out of 200 respondents, only 75 respondents post their reviews about the product they buy and rest 125 didn't post their reviews.

>>62.5% of the people do not post product reviews.

4.3.5 Respondents attitude towards posting their reviews when they are satisfied v/s dissatisfied

Out of 200 respondents, 42 (21%) respondents will never post reviews when they are satisfied with the product or service, 114 (57 %) respondents sometimes post reviews when they are satisfied with the product or services, 44 (22%) respondents always post reviews when they are satisfied with the product or services.

Figure 2: Product reviews when customers are satisfied with the purchase.

Figure 3: Product review when customers are dissatisfied with the purchase

Out of 200 respondents, 38 (19%) respondents will never post reviews when they are dissatisfied with the product or service, 94 (47%) respondents sometimes post reviews when they are dissatisfied with the product or services and 68 (34%) respondents always post reviews when they are dissatisfied with the product or services.

>>12% more people write post reviews (assumed critical) when dissatisfied, than compared to people who post reviews when happy with their purchase.

4.3.6. Types of product reviews preferred by the customers

After analyzing who will post product review, let's see which type of product reviews are preferred by the respondents.

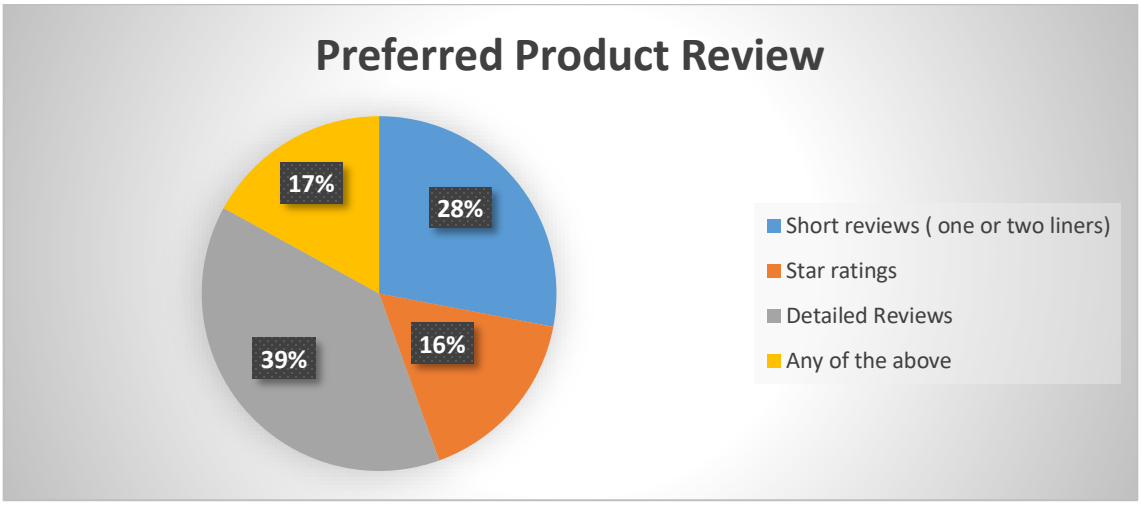

Figure 4: Preferred Product Reviews

>> Out of 200 respondents only 32 (16%) respondents preferred reading star rated reviews, 56 (28%) respondents preferred short reviews, 78 (39%) respondents preferred detailed review and rest 34 (17%) respondents can go with any of the review type which is convenient to them.

4.3.7. Respondents attitude towards posting their reviews about the product they purchase if they get some rewards for it.

In the previous table, we noticed that only 62.5% of our respondents post their review. So, we tried to know that whether they are lacking some motivation to post reviews for every purchase they made. Therefore, we asked them about their attitude towards posting a product review (either positive or negative as per their experience), if they get a reward for it. This approach is not same as paid reviews because in paid reviews we generally pay for positive reviews. But here, the customers will be free to post their experiences irrespective of whether it is positive or negative.

We asked the respondents, would they post purchase review (either critical or supportive) if they were given a reward to do so?

Would you post reviews for your purchase (either positive or negative reviews), if you get a reward for it?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	26	13.0	13.0	13.0
	YES	174	87.0	87.0	100.0
	Total	200	100.0	100.0	

Table 4.2. Frequency distribution of posting product review post purchase if customers get incentives

>>87% of the respondents admit they would post reviews if they were given a reward for doing so.

4.3.8. Relationship between Respondents attitude towards posting their reviews (without any rewards) and Respondents attitude towards posting their reviews when they get rewards for it.

Do you post product reviews post purchase? * Would you post reviews for your purchase (either positive or negative reviews), if you get a reward for it? Crosstabulation				
Count				
		Would you post reviews for your purchase (either positive or negative reviews), if you get a reward for it?		
		NO	YES	Total
Do you post product reviews post purchase?	NO	19	106	125
	YES	7	68	75
Total		26	174	200

Table 4.3: Relationship between respondents attitude towards posting their reviews without any rewards and with rewards

Because of huge difference between the Respondents attitude towards posting their product reviews when they didn't receive any rewards and when they receive rewards, we tried to find relationship between these two respondents attitude.

For this, we did Cross-tabulation and the results are:

Out of 200 respondents, 19 respondents will not post their product reviews even if they get some rewards for it or not; 7 respondents who will post product reviews (without rewards) before, will not post product reviews when they get some rewards for it.

>>The interesting result to notice is that 106 respondent who do not post product reviews post purchase, are willing to do so if there was a reward for doing so i.e. 84.8% conversion.

>>Overall, out of 200 respondents, 174 respondents (87%) will post their reviews for their purchase, if they get reward for it and only 26 respondents will not post their reviews even if they get reward for it.

It shows that customers lack motivation to post their reviews about the product they purchased. Incentivizing can encourage customers to post genuine reviews about their purchase. It will be helpful for the customer as well as the provider.

4.3.9. Relationship between Respondents attitude towards posting their reviews when they get rewards for it and their Annual Income.

We get to know from the previous table that how much influence rewards can make to post product reviews. Now, we would want to know whether there is any relation between the Family Annual Income and Respondents attitude towards posting their reviews when they get rewards for the same.

ANNUAL_INCOME * Would you post reviews for your purchase (either positive or negative reviews), if you get a reward for it? Crosstabulation		
	Would you post reviews for your purchase (either positive or negative reviews), if you get a reward for it?	Total

		NO	YES	
ANNUAL _INCOME	Less than 3 Lakhs	10	49	59
	3-5 Lakh	6	53	59
	5-8 Lakh	5	34	39
	8-10 Lakh	4	21	25
	Above 10 Lakh	1	17	18
Total		26	174	200

Table 4.4: Relationship between Family annual income and posting reviews when rewarded

This clearly shows that, whether customers income is high (more than 10 lakhs) or low (less than 3 lakhs) for most of them, the motivation for post product review is some rewards. So, the marketer should add some rewards to it if they want reviews for their product.

>> **Income of respondents does not show much difference, i.e. most of the respondents in all the income groups are willing to write product reviews for rewards.**

Research question four: Which incentive method is most preferable by the customers?

Checking if cashback directly into the bank account it preferred by all the people.

Hypothesis Test:
Null hypothesis H0: First choice for everyone is Cashback directly into bank ($\mu=5$)
Alternative hypothesis H1: Some people prefer other modes. ($\mu\neq5$)

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Cashback directly into bank account	200	3.47	1.530	.108

One-Sample Test						
	Test Value = 5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Cashback directly into bank account	-14.142	199	.000	-1.530	-1.74	-1.32

Table 4.5: One sample test of cash backs directly into bank account

Here in two tailed one sample T test, significance<0.05. Therefore we reject the Null Hypothesis. Which means Not all the respondents prefer cashback directky into the bank account.

So which one is the most preferred?

4.3.10. Most preferred method of incentive by the Respondents

Incentives are one of the major motivation factor for customers, no matter how rich they are or how poor they are. But, it is important to know about the type of incentives which are preferred by them and which one they preferred the most because offering an incentive which is not preferred by the customer is no less than not providing any incentives for the same.

We asked respondents which kind of incentives they have received in the past and which one do they prefer the most and why.

To analyze the result we have used Friedman's Test to rank the methods of incentives by sorting the mean ranking score obtained by these factors.

By doing this test, we get the result where Cashback (directly to bank account) is most preferred by the respondents. The second rank is given to discount vouchers; third rank is given to Delivery fee waiver; fourth rank is given to Cashback into digital wallet and fifth rank is given to free premium service for some time and this method of incentive is the least preferred by them.

Ranks	
Method	**Mean Rank**
Cashback directly into bank account	3.47
Discount Vouchers	3.10
Delivery fee waiver	3.04
Cashback into your digital wallet	2.98
Free premium service for some time	2.41

Table 4.6:Rank of the most preferable method of incentive

4.3.11. Reason why Cashback directly to bank account is most preferred choice by the respondents

We asked respondents why would Cashback over other incentives, if they prefer over others. We received 144 responses out of 200 people, their reasons are following:

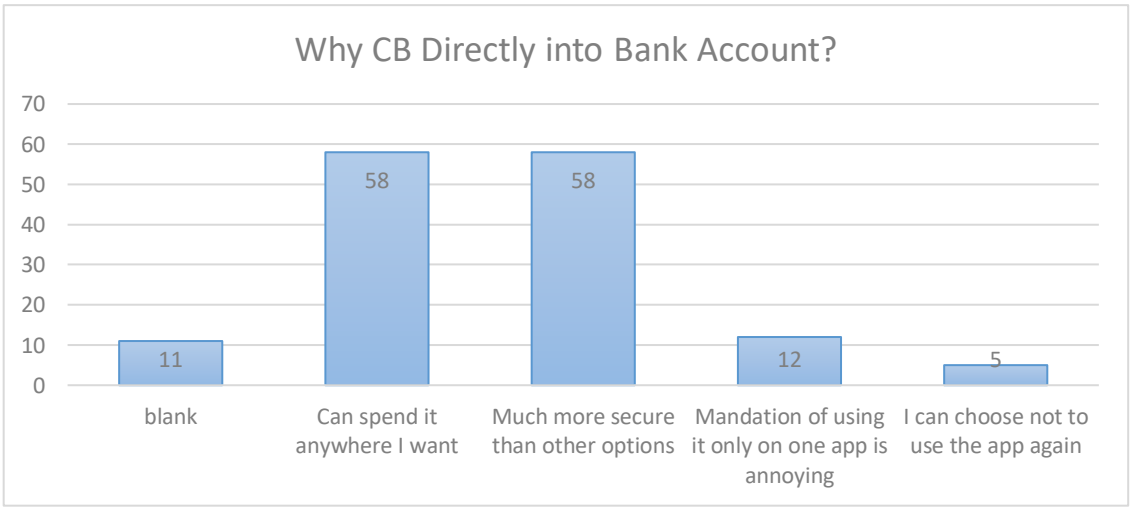

Figure 5: Reasons of Cashback directly into bank account is preferred

Freedom to spend it anywhere and security of their fund turns out to be the major reason for preferring Cash back directly into their bank account.

This leaves us with two options either giving the user flexibility to use their earned bonus and making the wallet more secure or tying up with banks which can provide the same.

4.4. Analyzing users' perception about Artificial Intelligence and Augmented Reality based tools applications in e-commerce.

Research question five: Do customers accept AI and AR based tools to assist them in online shopping?

4.4.1 Relationship between respondents who are not good at shopping and respondents who are looking for what others are buying as suggested by website.

Here, we tried to find the relationship between respondents who are not good at shopping clothes and respondents who are looking for what others are buying as suggested by websites and trying them. 56 respondents who are not good at shopping clothes would definitely look at what others are buying, as suggested by the websites, and try them.

"I am not good with shopping for clothes" * "I look at what others are buying, as suggested by the websites, and try them." Crosstabulation					
		"I look at what others are buying, as suggested by the websites, and try them."			
		Disagree	Neutral	Agree	Total
"I am not good with shopping for clothes"	Disagree	19	16	15	50
	Neutral	10	31	29	70
	Agree	5	19	56	80
Total		34	66	100	200

Table 5.1: Relationship between respondent's online shopping skills and attitude of looking at what others are buying

>56 out of 80 people who think they are bad with shopping clothes would look on web for recommendation. These people are most likely to go with platforms who are good with recommendations and offer personalized recommendation based on analysis user choices.

>Overall 50% of the people look for recommendations on the web.

4.4.2.Relationship between respondent's shopping skills; respondents looking for what others are buying as suggested by website, and attitude towards using AI recommendation

The focus of this study is to find the relationship between respondents who are most likely to look at what others are buying, as suggested by the websites and respondents who would like AI Recommendation as suggested by the websites.
Here, the cross tabulation digs deeper into three layers, people who think they are bad at buying clothes, who are most likely to look for recommendations online and then the final useful layer: who among them would like to have an AI based recommendation system to help them out.

>> Among those who are good at shopping online, never look at what others are buying as suggested by the websites, and try them, 2 respondents doesn't like to prefer any AI recommendation tools, 5 respondents may prefer any AI recommendation tools, 12 respondents will definitely prefer AI recommendation tools.
>> Among those who are good at shopping online, sometimes look at what others are buying as suggested by the websites, and try them, 5 respondents may prefer any AI recommendation tools, 11 respondents will definitely prefer AI recommendation tools.
>> Among those who are good at shopping online, always look at what others are buying as suggested by the websites, and try them, 1 respondents may prefer any AI recommendation tools, 14 respondents will definitely prefer AI recommendation tools.
>> Among those who are average at shopping online, never look at what others are buying as suggested by the websites, and try them, 4 respondents may prefer any AI recommendation tools, 6 respondents will definitely prefer AI recommendation tools.
>> Among those who are average at shopping online, sometimes look at what others are buying as suggested by the websites, and try them, 10 respondents may prefer any AI recommendation tools, 21 respondents will definitely prefer AI recommendation tools.
>>Among those who are average at shopping online, always look at what others are buying as suggested by the websites, and try them, 2 respondents doesn't like to prefer

any AI recommendation tools, 5 respondents may prefer any AI recommendation tools, 22 respondents will definitely prefer AI recommendation tools.

>> Among those who are not good at shopping online, never look at what others are buying as suggested by the websites, and try them, 1 respondents doesn't like to prefer any AI recommendation tools, 2 respondents may prefer any AI recommendation tools, 2 respondents will definitely prefer AI recommendation tools.

>>Among those who are not good at shopping online, sometimes look at what others are buying as suggested by the websites, and try them, 2 respondents doesn't like to prefer any AI recommendation tools, 4 respondents may prefer any AI recommendation tools, 13 respondents will definitely prefer AI recommendation tools.

>>Among those who are not good at shopping online, always look at what others are buying as suggested by the websites, and try them, 3 respondents doesn't like to prefer any AI recommendation tools, 6 respondents may prefer any AI recommendation tools, 47 respondents will definitely prefer AI recommendation tools.

"I look at what others are buying, as suggested by the websites, and try them." * Do you think it will be better to have a recommendation tool that asks for your preference and suggests professional stylists' recommendations for you? * "I am not good with shopping for clothes" Crosstabulation

			Do you think it will be better to have a recommendation tool that asks for your preference and suggests professional stylists' recommendations for you?			
"I am not good with shopping for clothes"			Disagree	Neutral	Agree	Total
Disagree	"I look at what others are buying, as suggested by the websites, and try them."	Disagree	2	5	12	19
		Neutral	0	5	11	16
		Agree	0	1	14	15
	Total		2	11	37	50
Neutral	"I look at what others are buying,	Disagree	0	4	6	10
		Neutral	0	10	21	31

	as suggested by the websites, and try them."	Agree	2	5	22	29
	Total		2	19	49	70
Agree	"I look at what others are buying, as suggested by the websites, and try them."	Disagree	1	2	2	5
		Neutral	2	4	13	19
		Agree	3	6	47	56
	Total		6	12	62	80
Total	"I look at what others are buying, as suggested by the websites, and try them."	Disagree	3	11	20	34
		Neutral	2	19	45	66
		Agree	5	12	83	100
	Total		10	42	148	200

Table 5.2:.Relationship between respondent's online shopping skills; attitude of looking at what others are buying and perception about using AI recommendation

This suggest that most of the respondents, whether they look at others are buying, as suggested by the websites, and try them or not, would like to prefer AI Recommendation tools where suggestion are derived from preferences of customers and the professional stylists.

4.4.3. Relationship between attitude of respondents who are not good at shopping online and attitude of respondents towards online try on features before they buy.

Cross tabulation results below suggests that:

"I think sometimes the clothes I purchase online doesn't look good on me when I try them at home after delivery." * "I wish I had an option to try out clothes before actually buying them." Crosstabulation					
		"I wish I had an option to try out clothes before actually buying them."			
		Disagree	Neutral	Agree	Total
"I think sometimes the clothes I purchase online doesn't look good on me when I try them at home after delivery."	Disagree	0	0	4	4
	Neutral	2	8	26	36
	Agree	1	5	154	160
Total		3	13	184	200

Table5.3: Relationship between respondent's satisfaction after delivery and willingness to have 3D try on features before buying

>> 4 Respondents who are good at shopping online are willing to have online try on feature before they buy

>> Among those who are average at shopping online, 2 respondents don't want the online try on feature, 8 respondent may like the online try on feature and 26 respondents are willing to have online try on feature before they buy.

>> Among those who are not good at shopping online, 1 respondents don't want the online try on feature, 5 respondents may like the online try on feature and 154 respondents were willing to have an online try on feature before buying.

>> It suggests that whether they were good at online shopping or not majority of the respondents would like to have online 3D try on feature before buying.

4.4.4. Relationship between respondent's shopping skills; respondents looking for site, and attitude towards using 3D try on features.

The motive of this study is to find the relationship between respondents shopping skills, respondents attitude towards who look at what others are buying, as suggested by the websites and respondents attitude towards using 3D try on features.
Here, the cross tabulation digs deeper into three layers, people who think they are bad at buying clothes online, who wish to had an option of try out clothes beforr actually buying them and then the final useful layer: who among them would like to have an AI 3D try on feature to help them out.

>> Among those who were satisfied with clothes while trying after delivery, wish to have an option to try out clothes before buying clothes, 2 respondents may try their clothes and 2 respondents will definitely try their clothes on 3D try on feature.
>>Among those who were sometimes not sure with clothes while trying after delivery, don't wish to have an option to try out clothes before buying clothes, 2 respondents may try their clothes.
>>Among those who were sometimes not sure with clothes while trying after delivery, sometime wish to have an option to try out clothes before buying clothes, 4 respondents may try their clothes and 4 respondents will definitely try their clothes on 3D try on feature.
>>Among those who were sometimes not sure with clothes while trying after delivery, really wish to have an option to try out clothes before buying clothes, 10 respondents may try their clothes and 16 respondents will definitely try their clothes on 3D try on feature.
>>Among those who were not satisfied with clothes while trying after delivery, don't wish to have an option to try out clothes before buying clothes, 1 respondents will definitely try their clothes on 3D try on feature.
>> Among those who were not satisfied with clothes while trying after delivery, sometimes wish to have an option to try out clothes before buying clothes, 2 respondents may try their clothes and 3 respondents will definitely try their clothes on 3D try on feature.

>> Among those who were not satisfied with clothes while trying after delivery, really wish to have an option to try out clothes before buying clothes, 1 respondent doesn't want to try their clothes, 20 respondents may try their clothes and 133 respondents will definitely try their clothes on 3D try on feature.

"I wish I had an option to try out clothes before actually buying them." * "If there was a tool like Lenskart's 3D try on feature for trying out clothes it would be really cool." * "I think sometimes the clothes I purchase online doesn't look good on me when I try them at home after delivery." Crosstabulation

"I think sometimes the clothes I purchase online doesn't look good on me when I try them at home after delivery."			"If there was a tool like Lenskart's 3D try on feature for trying out clothes it would be really cool."			
			Disagree	Neutral	Agree	Total
Disagree	"I wish I had an option to try out clothes before actually buying them."	Agree		2	2	4
	Total			2	2	4
Neutral	"I wish I had an option to try out clothes before actually buying them."	Disagree		2	0	2
		Neutral		4	4	8
		Agree		10	16	26
	Total			16	20	36
Agree	"I wish I had an option to try out clothes before actually buying them."	Disagree	0	0	1	1
		Neutral	0	2	3	5
		Agree	1	20	**133**	154
	Total		1	22	137	160
Total	"I wish I had an option to try out clothes before actually buying them."	Disagree	0	2	1	3
		Neutral	0	6	7	13
		Agree	1	32	151	184
	Total		1	40	159	200

Table 5.4: Relationship between respondent's shopping skills, respondents attitude of looking for site and willingness of 3D try on feature before buying

>>This suggest that even those who don't wish to have some options to tryout clothes before purchasing them are also considering 3D try on feature as good option. The marketer should keep this study and find and make the first move for clothes.

4.4.5.Tool Combination preferenc

Tool combination				
		Frequency	Percent	Cumulative Percent
Preferred tool	3D Try on feature	55	27.5	27.5
	Recommendation System	39	19.5	47.0
	Both together	106	53.0	100.0
	Total	200	100.0	

Table 5.5: Frequency Distribution of tool combination

>> 106 out of 200 (53%) would want a combination of recommendation tool and the AR based 3D trial feature, followed by only 3D Try feature by 27.5% of the people and Recommendation system only by 19.5% of the people.

>> This study suggests that majority of respondents want both Recommendation system and 3D try on feature while doing online shopping.

4.4.6 Gender wise preference of tool:

Gender * Tool combination Crosstabulation					
		Tool combination			
		3D Try on feature	Recommendation System	Both together	Total
Gender	Male	38	19	45	102
	Female	17	20	61	98
Total		55	39	106	200

Table 5.6: Relationship between gender and tool combination

>>Out of 102 male respondents, 38 male respondents prefer 3D Try on feature only , 19 male respondents prefer Recommendation system only and 45 male respondents prefer both 3D try on feature and Recommendation system.

>> Out of 98 female respondents, 17 female respondents prefer 3D Try on feature only, 20 female respondents prefer Recommendation system only and majority of female

respondents i.e., 61 female respondents prefer both 3D Try on feature and Recommendation system.

>This study suggests that majority of female respondents are willing to have both feature together and 44% of male respondents also want both feature together and 37% of male respondents are willing to have 3D try on feature only.

FINDINGS AND RECOMMENDATIONS

Findings

The study found that how E-commerce is a tool of expansion. It helps us in finding out how much consumers are aware about the E-referral, product reviews, AI recommendation tools, Augmented Reality tools and what are their views about these. In this study we found that:-

>> Security certificates, Loading sped, product description, customer reviews, mobile browser support as the most important factors for the users While using any e-commerce website or app.

>> 59% of our target population will install an e-commerce app referred by a friend, if both of them get incentives.

>> 59% of the users will refer an e-commerce app to their friends, if both of them get incentives.

>> 87% of population will post their reviews about the product only when they get some rewards for it.

>> The most preferred method of incentives by the respondents is Cashback directly to their bank account because they can spend that money an where they want. They are not restricted to redeem that amount in shopping from the same app only.

>> 74% of the total respondents will look for AI recommendation on the web. Whether they are good with shoppping online or not, they look at what others are buying, as suggested by the websites, and try them or not, would like to prefer AI Recommendation tools where suggestion are derived from preferences of customers and the professional stylists.

>> 75.5% of total population whether they are always satisfied their shopping after delivery or not, or wish to have an option to try on clothes or not but still will prefer tools which offers 3D try on features for trying out clothes. This information may help the online marketer who want you grab the online market share in less time.

>> 66.5% of respondents , including those who don't wish to have some options to tryout clothes before purchasing them are also considering 3D try on feature as good option.

>> 53% of population want to have both Recommendation system and 3D try on feature to enhance their online shopping experience.

>> 62.24% of female respondents are willing to have both Recommendation system and 3D try on feature together. 44.11% of male respondents are willing to have both feature together and 37.25% of male respondents are willing to have only 3D try on feature, Recommendation is system is not that much important to them.

Recommendations

Following are the recommendation that we would suggest to E-commerce providers:

1. The study established that post purchase engagement by users is very less and therefore we recommend that the management of companies should provide unique experience to its customers to increase their engagement. To increase the engagement of the users, the management may add some gaming elements to it to increase their involvement.
2. The study also found that very few users post reviews about the product and therefore we recommend to add valuable incentives to motivate to them.
3. The study also found that Security certificates, Loading sped, product description, customer reviews, mobile browser support are important factors. We recommend that these 5 factors must be keep in mind while developing e-commerce website or app.
4. The study found that user are willing to have AI recommendation tools and 3D try on feature to enhance their online shopping experience. We recommend that e-commerce companies specially in the clothes, ornaments, shoes, cosmetics companies to add features to e-commerce website or app.
5. For a company who has recently launched the e-commerce app should give Cashback directly to bank accounts because it act as best influencer for referring the app and create awareness about it. But if there is already awareness of app in the mind of customers then the company should give wallet balance which could be redeemed with the next purchase to increase the transactions. Few portals have started their own digital payments portal as well, in that case cashbacks into the wallets should work well.

LIMITATIONS

1. Because of lock down, it was really difficult to access all the resources.
2. Consumer behavior would be changed according to the product and services offering online and they have different importance in their eye so it was pretty difficult to know their preferences.
3. The data set we collected is not huge. Therefore the results are also limited to some extent.
4. The responses may have some biasness which may have been overlooked.
5. The result obtained may be specific to a particular industry and doesn't go in the same way with other industries.

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ANNEXURE

The primary data used in the study is collected by following survey questionnaire

DEMOGRAPHICS		
1	Gender	○ Female ○ Male ○ Other
2	Age	○ Below 15 ○ 15-20 ○ 21-25 ○ 25-30 ○ 30+
3	Education level	○ High school & below ○ Diploma holder ○ University Graduate ○ Post graduate ○ Certified professional ○ PhD and above
4	Employment status	○ Student ○ Unemployed ○ Self-employed ○ Retired ○ Salaried
5	Annual Income	○ Below 3 Lakh ○ 3-5 Lakh ○ 5-8 Lakh ○ 8-10 Lakh ○ More than 10 Lakh
E-COMMERCE WEBSITE FEATURE AND THEIR IMPORTANCE		
6	Mark the importance of the following factors for an E commerce WEBSITE: • Loading Speed • Website Interface • Security certificates • Mobile browser support • Search bar location & visibility • Smartphone App (iOS/Android) • Cascaded Product categories • Recommendation Section • Sorting options • Result Filtering option • Product Description • Terms and Conditions • Customer reviews	○ Very Important ○ Important ○ Neutral ○ Unimportant

	• Product Comparison • Dashboard visibility • Ease of locating Account options • Zoom In/Out for photos • Separate Cart and Wish list option • Help/Support button visibility • Response time for queries	
PRODUCT REVIEWS		
7	When was the last time you made an online purchase?	○ This week ○ Within the last two weeks ○ Within a month ○ Within 3months more than 3 months
8	Did you post a product review for the same?	○ Yes ○ No
9	Do you post a product review when you are “Satisfied" with the purchase?	○ Always ○ Sometime ○ Never
10	Do you post a product review When "You're Dissatisfied" with the purchase?	○ Always ○ Sometime ○ Never
11	What type of product reviews do you prefer to see about the products?	○ Detailed Reviews ○ Short reviews (one or two liners) ○ Star ratings ○ Any of the above
12	Would you post reviews for your purchase (either positive or negative reviews), if you get a reward for it?	○ Yes ○ No ○ Maybe
E-REFERRALS		
13	"I am likely to buy a product suggested by a friend"	○ I agree ○ I disagree
14	"I am likely to try a platform suggested by a friend."	○ I agree ○ I disagree
15	"I am likely to install an e commerce app referred by a friend"	○ If it gives you some joining bonus ○ If it gives bonus to your friend only ○ If it gives both you and your friend a bonus
16	You would most likely refer an app to your friends when	○ If it gives you some joining bonus

		○ If it gives bonus to your friend only ○ If it gives both you and your friend a bonus
17	What type of referral bonus have you received in past?	☐ Cashback directly into bank account ☐ Cashback into your digital wallet (on same platform) ☐ Discount Vouchers ☐ Delivery fee waiver ☐ Free premium service for some time
18	Give your preference (1 being least preferable and 5 being most preferable): ○ Cashback directly into bank account ○ Cashback into your digital wallet (on same platform) ○ Discount Vouchers ○ Delivery fee waiver ○ Free premium service for some time	○ 1 ○ 2 ○ 3 ○ 4 ○ 5
19	If cashback (directly into the bank account) is your most preferred mode, why?	☐ Much more secure than other options ☐ Can spend it anywhere I want ☐ Mandation of using it only on one app is annoying ☐ I can choose not to use the app again
20	If wallet money is your preference, why?	☐ Hassle free transaction ☐ Checking between bank account and digital wallet is too hectic ☐ I can use it on next purchase ☐ Only on frequently used platform ☐ I can use it outside app as well

AR AND AI BASED E-COMMERCE TOOLS		
1	"I wish I had an option to try out clothes before actually buying them."	○ Strongly Agree ○ Agree ○ Neutral ○ Disagree ○ Strongly Disagree
2	"I think sometimes the clothes I purchase online doesn't look good on me when I try them at home after delivery."	○ Strongly Agree ○ Agree ○ Neutral ○ Disagree ○ Strongly Disagree
3	"If there was a tool like Lenskart's 3D try-on feature for trying out clothes it would be really cool."	○ Strongly Agree ○ Agree ○ Neutral ○ Disagree ○ Strongly Disagree
4	Given a chance would you like to try such feature.	○ Yes ○ No ○ Maybe
5	If yes, in what ways do you think this feature will help you?	☐ Save time ☐ Enhance shopping experience ☐ I can check whether clothes suit me or not before buying ☐ Reduce uncertainty of not liking the product on actual delivery ☐ Avoiding unnecessary purchase ☐ It won't help me
6	If not, why?	☐ I'm afraid of uploading my photos ☐ It would consume time ☐ I cannot rely on such tools ☐ Other: ……
7	"I am not good with shopping for clothes"	○ Strongly Agree ○ Agree ○ Neutral ○ Disagree ○ Strongly Disagree
8	"I ask friends/family to help me in shopping for clothes."	○ Strongly Agree ○ Agree ○ Neutral ○ Disagree ○ Strongly Disagree
9	"I look at what others are buying, as	○ Strongly Agree

	suggested by the websites, and try them."	○ Agree ○ Neutral ○ Disagree ○ Strongly Disagree
10	Do you think it will be better to have a recommendation tool that asks for your preference and suggests professional stylists' recommendations for you?	○ Strongly Agree ○ Agree ○ Neutral ○ Disagree ○ Strongly Disagree
11	How do you think it will help you?	☐ In selecting best styles for me ☐ Reduce complexity in shopping for clothes ☐ Less confusion while making purchase ☐ Save time and effort ☐ Reduces need for asking others' help
12	What could be the reasons for not trying the tool?	☐ Seller may influence the result ☐ Can't rely on result by machine ☐ Friend's /family's opinion is more important ☐ I make my own choice
13	Do you think it will help you significantly if both tools were used together?	○ Yes ○ No ○ Maybe
14	From the following select the option that would be of most help to you.	○ Recommendation tool only ○ 3D Try-on tool only ○ Combination of both tools

Note:

- ○ – Only one choice to select
- ☐ – Mark all applicable options

E-commerce as a tool of expansion

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