

## Impact of E-Commerce in Indian Economy

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**Abstract:** This paper reveals the importance of ecommerce in Indian economy. As we all know India is among the fastest growing economy of the world, thus it is very much important to have government intervention and huge investment inflow in form of Foreign direct investment in large economy like India to stabilise and increase the growth of ecommerce industry in the economy. In India with the digital penetration has increased significantly, according to statistical data internet use has increased to 429.23 million user in India and is expected to reach around 830m by year 2021. There has been significant rise of e-commerce in India, as India's internet economy is 125 billion dollar in 2017. In this paper we will look towards the role of government in ecommerce industry and also look towards the various barriers of e-commerce in Indian aspects. "In this research paper we will talk mainly about B2C Ecommerce and its percentage of gross domestic product in Indian economy. we will also talk about entrepreneurs roles and decreasing value of ease of doing business in India as India in 2017 ranked in 100<sup>th</sup> position from 132<sup>th</sup> position out of 190 countries in 2008". For a country such as India, one of the most important advantages of e-commerce is its potential to help developing rural areas to leap-frog into the knowledge paradigm. E-Commerce is great platform not only to develop infrastructure but also increase employment rates in India and thus overall impact in increasing economic and social growth in Indian economy.

**Keywords** - Ecommerce, Economic Growth, FDI, GDP

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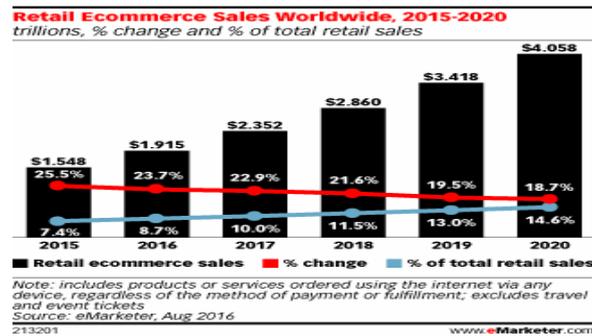
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### I. Introduction

Today e-commerce has become an important part of daily life. Accessibility to e-commerce platforms is not a privilege but rather a necessity for most people, particularly in the urban areas. There are alternative e-commerce platforms available (instead of the traditional physical platforms) for almost every aspect of our lives, starting from purchasing of everyday household items to online brokerage. As in 21<sup>st</sup> century as internet has become most important and frequently and most necessity device, it will surely race to achieve more growth and sales via internet. According to eMarketer, worldwide retail Ecommerce sales will reach \$1.915 trillion by the end of 2017. With increase in digital penetration all across the globe and cheap and frequent easy accessibility of internet, it is prone to increase the growth of ecommerce all across the world, meanwhile lot of traditional people are quite worried and tensed with change in pattern of sale via internet, with the availability of cheap and high speed internet with variety and security options, lot of individual and firms have connected their business with e-commerce. As in recent world it is highly impossible to grow without being available online. Thus to grow more and earn higher profit it is highly recommended to have proper structure availability and easy accessibility of online sites, because it not only determines profit and no. of users but also determines the ranking and position of enterprise of the firm in overall business world.

Also in this research paper I will focus about the growth and pattern of e-commerce in India and its sales and impact in Indian economy, of all different types of e-commerce, my research paper restricts its study to mainly b2c types of business, though it did cover other types of e-commerce and its social impact also in India via sales of e-commerce in India.



Thus there is significant rise in sale of retail e-commerce over the years and according to e-Marketer retail e-commerce sale by 2020 should reach more than \$4trillion. With above figure we can easily understand how frequent and sudden the change of sales pattern is world as all the major economies are shifting towards e-commerce sales.

### 1.1 What is E-commerce?

There is no general definition of electronic commerce, but generally e-commerce is defined as E-commerce (electronic commerce or EC) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet but also all other activities which are associated with any transaction such as:

- Delivery
- Payment facilitation,
- Supply chain and service management, can also be categorized or put under this section of economy.

E-commerce increases the growth of online business. It can be categorized under

- 1- Online marketing
- 2- Online advertising
- 3- Online sales
- 4- Product delivery
- 5- Product service
- 6- Online billing
- 7- Online payments

Thus, electronic commerce deals with all the work loads related to internet. It also describes the exchange of data between the financing, billing and payment aspects of e-business transactions. Generally e-commerce and e-business are used interchangeably.

### 1.2 Different Types Of E-Commerce

There are different types of e-commerce, we will examine five basic types of e-commerce in this research paper.

- 1- **BUSINESS – TO-BUSINESS (B2B)** – it comprises of all electronic transactions of good or services conducted between 2 companies. This type of e-commerce includes intra system and electronic markets.
- 2- **BUSINESS TO CUSTOMER (B2C)** - This transaction carried out in the retail trade with individual buyers. this typical buyer of any store on the site is a consumer or a buyer
- 3- **CUSTOMER TO CUSTOMER (C2C)**- in this type of e-commerce consumer sells its product directly to consumer
- 4- **CUSTOMER TO BUSINESS(C2B)**- In this category of e-commerce, individual consumer of goods or services sells their product to organisation.
- 5- **BUSINESS TO GOVERNMENT (B2G)** – In this e-commerce section it comprises of commerce between companies and public sector is listed.

There are some unique features of E-commerce which thus helps firm to expand their business and thus earn profit, and thus helps in achieving growth. some of the unique feature of E-commerce are –

- 2 Ubiquity
- 3 Global reach
- 4 Universal standards
- 5 Richness
- 6 Interactivity
- 7 Information density
- 8 Personalization

**9 Types of e-commerce Business models**

- 1- Drop shipping
- 2- Wholesaling and warehousing
- 3- White – labelling
- 4- Manufacturing
- 5- Subscription – based

**10 Product models for E-COMMERCE**

- 1- Single product
- 2- Single category
- 3- Multiple category
- 4- Affiliste
- 5- Hybrid

11 **M-COMMERCE** ( mobile commerce ) is the process of buying and selling of goods and services through wireless technology i.e. devices such as cellular telephones and personal digital assistants . Japan is seen as global leader of m-commerce. This is more faster, secure and scalable. In coming years the contribution will significantly increase in global market with more and more mobile penetration in the world .

With Reference Of M-Commerce In India



**Fig1** – retail m-commerce sale in India (2015-2020) [source – stastia.com]

Apart from Japan, United Kingdom, South Korea, Australia, Netherland are among the fastest growing m-commerce economy of the world in 2015. In 2017 m-commerce in Germany , the us and UK , m-commerce will comprise at least one –third of total retail ecommerce sale (emarketer.com) M-commerce is growing rapidly as a stable and secure supplement to the e-commerce world in India. As per requirement many small firms have also established online stores to have more impact and earn more profit for the enterprise . Thus it is very much important to have secure and interactive online sites and app as they might play important role for achieving more growth.

The introduction of the paper should explain the nature of the problem, previous work, purpose, and the contribution of the paper. The contents of each section may be provided to understand easily about the paper.

**II. Literature Review**

1- “Shebazbano Salim Khan , S. N. Borhade , and Mainuddin S. Shaikh in their paper “Impact of e-Commerce on Indian Market: Social and Economic Impact” study how Electronic commerce (e-commerce) as part of IT insurrection became major part in the world deal in general and Indian economy in exacting. The Paper discovers the economic and social impact of e-commerce.( E-commerce, is currently rising at 30% .shopping site ebay Inc. Is growing at 60%. The number of customers of the company has augmented from one million users to 2.5 million in India; in the last four years. Some of the popular imported items imported by Indians include home decor, branded and unbranded apparel, accessories, and technology products.”)

2- (“affreenara and Dr Kishore Kumar Das in their paper “Growth of E-Commerce in India” talked about Ecommerce one of the highest growing business, with India having great market potential for investments. There has been huge surge in investment since; last year and more, is expected in coming years. The rapid growth in use of mobile and internet users has facilitated ecommerce business in both urban and rural cities. The

topics covered include the terms study of commerce, key drivers of growth, market growth potential, investment, retail market, logistics infrastructure, internet regulations, key challenges and future of e-commerce.”)

3- (“Mustafa Yapar and sedabayrakdar in their research thesis entitled “The Role of Taxation Problems on the Development of Ecommerce” talked about how important e-commerce in our daily lives . The impacts of globalization, and rapid developments are, experienced in knowledge and technology raises level of e-commerce. E-commerce provides businesses to sell their goods and services with a different method around the world and admits, to consumers to access goods and services easily. Taxation of e-commerce is an important, issue for countries, businesses and consumers who want to be a party of e-commerce. The issues such as tax loss and tax evasion are crucial in terms of countries. Difficulties like, uncertainty and double taxation make parties of e-commerce reluctant and affect development of e-commerce negatively. In this study, the role of taxation problems on the development of ecommerce will be examined. We will ,aim to focus on ,how e-commerce can be developed with proper tax regulations.”)

“(Devendera Agarwal in research paper entitled “E-Commerce: True Indian Picture” talked about the insight of e-commerce and highlights the present scenario of e-commerce in India. It presents the surfing pattern of Indian public, to give the critical review on truth of various reports being published from time to time. ( It also critically analyses the e-commerce with major focus on electronic commerce . The paper concluded that potential for growth of e-commerce in India is enormous. We have also seen that amount of interest that is there for travel industry is not seen in other services. Professional e-commerce, websites are doing excellent job but what are the factors that are inhibiting users from purchasing online need to be ascertained.)

“(boudhayanganguly and satyabhusha Dash in their research thesis entitled “Website characteristics, Trust and purchase intention in online stores: - An Empirical study in the Indian context” talked about Lack of trust in online transactions has been cited. The present study for the first time; provided empirical evidence on the mediating role of trust in online shopping among Indian customers. They concluded that the website factors that generate trust in online shopping in India. Due to the fact that ; the ecommerce in India is in a nascent stage, the website factors that generate trust among Indian customers were somewhat different from the results of previous studies carried out in the US and Canada. In this paper they for the first time in the Indian context, have comprehensively tested the mediator role of trust in online shopping.”

### **III. Objective Of Study**

India is one of the largest growing economy of the world. There is heavy use of internet among Indian citizens. The main basic objective of this research paper are -

- 1- To analysis the present trends of e-commerce in India
- 2- Government initiatives and different scheme in growth of e-commerce in India
- 3- Impact of e-commerce on literacy rate and employment rate in India

### **IV. Research Methodology**

**4.1 Method Of Data Collection:** Secondary data – various research papers of similar type have been referred to check the format and the type of graphs for analization of data .Other than this , various scholar and data from other certified bank and source are used to collect data which is interpreted further for data analysis

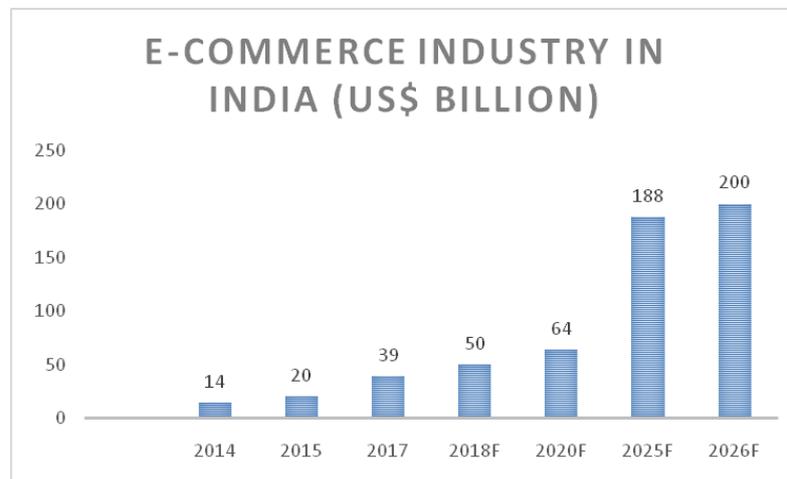
- **Type Of Research Design:** The research is descriptive and exploratory research . Descriptive in the sense that it establish relationship between literacy rate of the country and given parameter. Exploratory research in the sense that it collects data from various parameter and tends to establish a cause and effect relationship between the parameter.
- **PARAMETER :** - Different parameter is used to establish relationship between the indicators . literacy rate , m-commerce sale , growth of internet , unemployment rate and other such indicators are used to establish clear understanding about indicators.
- **DATA REPRESENTATION :-**The data collected is represented in form of Table , graph , pie charts and X-Y graphs .
- **Data technique** – To establish clear understanding and relationship among indicators SPIERMAN RANK CO-RELANTION AND PEARSON CO- RELATION is used in this research paper .

#### **4.2 Snapshot Of E-Commerce Industry In India**

E-commerce in India is fastest growing economy of the world. Indian E-commerce is growing at an annual rate of 51% , the highest in the world and is expected to jump from \$30b in 2016 to \$120billion by 2020 ) (source – assocham –forrester study paper ).With \$680b in online retail sales in 2016, china is largest E-commerce market globally, followed by United States and then India In India though there were use of e-commerce even before 1990s, but their contribution were significantly negligible. Recently a lot of blue chip PE firms have invested a huge money on India e-commerce as there is significantly huge potential and opportunity

to success. In India 100 percent FDI is permitted in B2B e-commerce and thus shows the government intention and contribution towards e-commerce industry in India . The growth of e-commerce in India highly dependent on the following sub factors that do have an impact on Indian economy when it comes about e-commerce industry in India .some of these factor are –

- 1- Participation of niche companies in online trading
- 2- Unmatched FDI
- 3- Uniform GST



source – (economic times , pwc,financial express )

Indian e-commerce industry has been an upward growth trajectory and is expected to surpass U.S to become largest e E-commerce market in the world by 2034 . India is at cusp of digital revolution. Internet has become important part of major population mainly because:-

- 1- Decrease in the subsequent price of broadband subscription price.
- 2- Change in urban India’s changing lifestyle
- 3- Increase in netzens
- 4- Convenience of online shopping

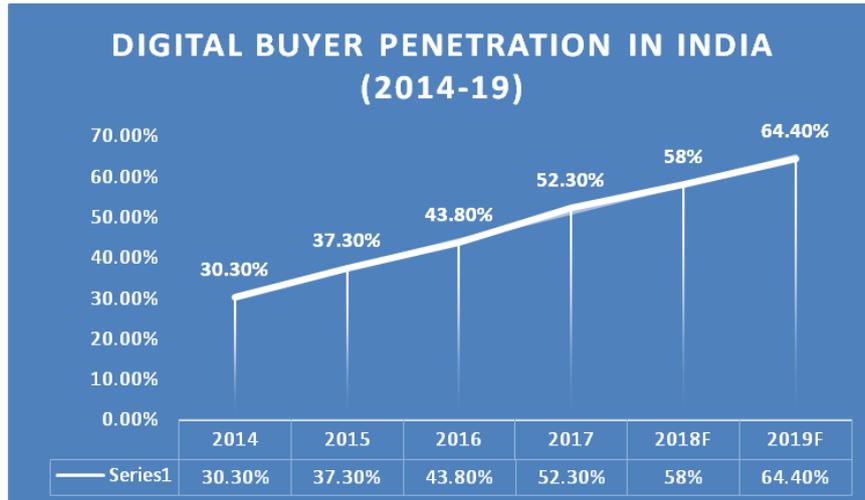
To the survey of onlineslaes.ai about Indian market, they stated that e-commerce in India is growing at very high rate and is expected to account around 1.61% of global GDP by 2018. According to onlinesales.ai they found out that some of significant no. related to e-commerce in Indian market they were –

- 100+ retail clients
- 1.4+ million purchases
- 2+ million transaction

The above number not only shows not only how good their contribution is Indian market , but also talked about their high degree of dependence in Indian economy and its contribution in India GDP. According to NASSCOM , India online market share increased at over 19 percent last calendar year which touch around estimated US\$33 Billion in 2017.

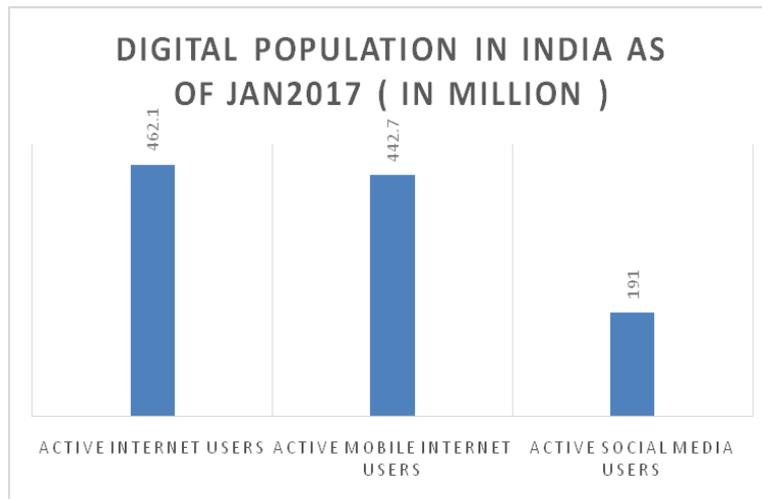
#### 4.3 Digital penetration in Indian economy

In India smartphone penetration rate are increasing over years , with the increasing role of and importance of internet and digitalization , it is thus very much needed to have an active smartphone with proper internet connection ,, With the increase of role of e-commerce in India , and its high contribution and increasing of e-commerce share in total retail sale .As of 2015 , 18.21% of India’s overall population owned a smartphone that is around to be at 39% by 2019 (Source – stastia.com)This increase in smartphone penetration in India is done by the point that India’s share of the global smartphone market is forecast to more than triple between 2013-17 to reach .



( Source – statstia.com )

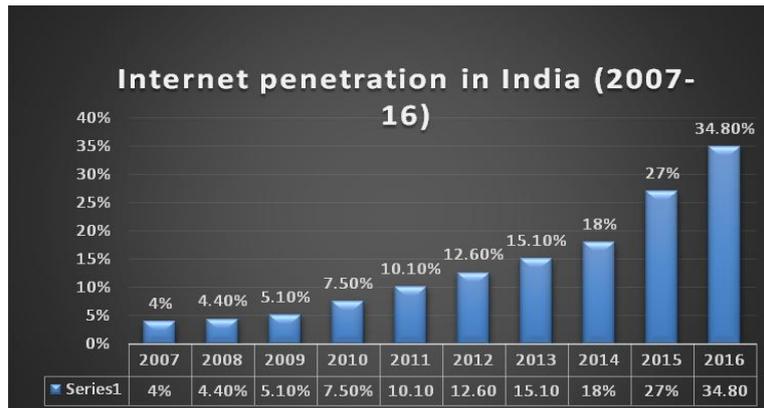
With the increase in number of smartphone and good connectivity of internet it is thus much needed factor to increase e-commerce influence in the Indian economy. The above graph depicts increase in digital penetration in India , from 30% in 2014 to be expected 64% by 2019 , Availability of large number of electrical appliances and its positive influences has guided towards such an increasing trend .With the increase in digital penetration, it thus according to( stastia.com ) that we should know where did the population , what they did with the increase of digital penetration increments . THUS according to stastia.com reports, Indian digital people in jan2017, different classified people came under different subsection which overall had an impact on e-commerce in India.



**4.4 Internet Penetration In India**

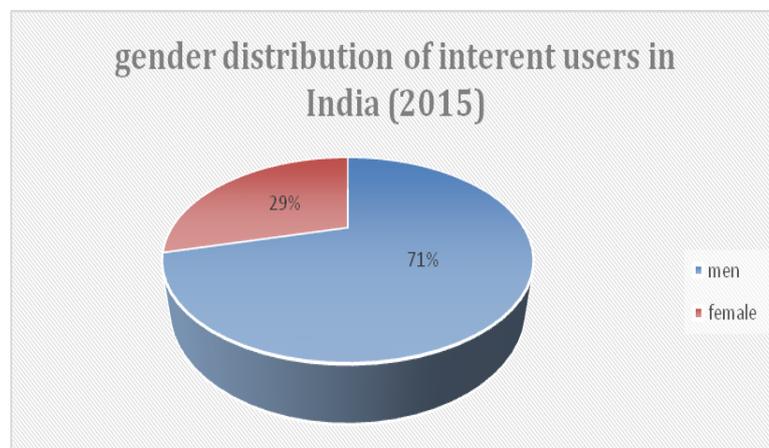
According to NATIONAL REPORT OF E-COMMERCE DEVELOPMENT IN INDIA, it was clearly stated that there is increase in internet penetration in India to very large extent. Internet user increases to 429.23 Million in 2017 which is expected to take a huge upward trend to 829 million in 2021 , which will thus help internet economy of India to grow significantly . With the increase of digital penetration and increase of internet penetration in Indian context, it was thus needed to link between the growth and impact of e-commerce in context of Indian scenario.

With the increase in digital buyer, it was quite clear the internet penetration will thus also ultimately rise to certain extent, also as we have studied in earlier paper that m-commerce has also increased significantly thus lead to growth in m-commerce. Thus with the advancement of technology and increase in share of smartphone and internet operators it was quite clear that internet penetration was much needed to make a more significant impact on the Indian market



Source – (statista.com)

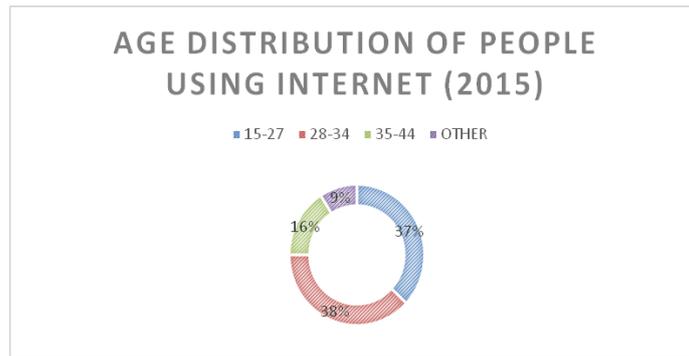
According to figure, there is a significant rise in internet penetration in India , as with the increase of e-commerce sales in India , it thus because of internet penetration has increased . Thus though internet operator also plays important role , thus availability of 2G,3G,4G in India and also price of subscription fee of these network operates are comparatively quite low Thus , which results in a overall increase,e in a internet penetration in India . India ranked second among all the countries which have internet users in 2016 .in 2016 India had 391,292,635 internet users which accounts 29.55% percent of population . Though India being a vast demographic country only 29.55% accounts not to be significantly encouraging. As , when compared to percentage of internet users , India ranked 143 , which not only shows large population of India is not utilizing the internet , which not only opens room for technical advancement but also talks about lack of infrastructure and technology prevalent in India . It also talked about poor social and political influence in India , As large variety of people mainly rural or poor people still do not know the positive side of internet implications in the market , and how significant theses data talked about the developing nation like India . Though the major problem is poverty and unemployment which still remain a main factor for lack of standard of living and poor knowledge and awareness among citizens of India .



(Source – UNICEF REPORT )

According to this report by UNIDO it was given that male are most dominant gender when it comes to use of e-commerce. Around 70% of population are that uses are male in 2015 , that means there are only 29% of female e-commerce users in India as of 2015 . This report talked highly about the position of women in Indian society and thus concerns everyone about the social status given to women in Indian scenario. The above data not only talked about e-commerce growth and sales in India , but thus also talked about the poor literacy rate in India among women’s and how poverty and unemployment have impacted hugely on the growth of women in increasing their standard of living in Indian society

Another reports suggests that men buys 3x more goods online than women .Though age structure of people is also using e-commerce is very much important , which we will study in this research paper in the next section . Thus India ranked 141<sup>st</sup> when it comes to percentage of population using internet to2nd in most internet users in India to only 29% of women’s in them pretty much talked about the Indian scenario itself .



(SOURCE – UNICEF REPORT)

The above report talked about how different age group people use mode of internet to buy or sales good thus lead to have an impact on Indian economy when it comes to e-commerce sector. Though we can easily intercept from the above figure that people categorized under age group 15-27 years account 37% of total e-commerce sales in India and people under age group 28-34 years accounts 38% of e-commerce sales in India . Thus any e-commerce industry aiming for high revenue should focus on the following age group and their necessity products and thus can not only bring growth of the firm but thus will lead to more advancement in innovation and technology which will ultimately have positive impact on Indian market .

Once we study about internet penetration in India and growth of internet users in India , we shall study about the growth of e-commerce in India and its trend of increase of e-commerce in Indian market . This research paper restricts the study to only B2C e-commerce sales and thus all the data given below are of B2C e-commerce types.

#### 4.5 Retail E-Commerce Sales In India

<b>Total Retail and Retail Ecommerce* Sales in India, 2015-2020</b>						
billions, % change and % of total retail sales						
	2015	2016	2017	2018	2019	2020
<b>Total retail sales</b>	<b>\$818.33</b>	<b>\$941.08</b>	<b>\$1,082.24</b>	<b>\$1,244.58</b>	<b>\$1,418.82</b>	<b>\$1,599.01</b>
—% change	14.0%	15.0%	15.0%	15.0%	14.0%	12.7%
<b>Retail ecommerce* sales</b>	<b>\$13.31</b>	<b>\$23.39</b>	<b>\$37.50</b>	<b>\$52.54</b>	<b>\$65.09</b>	<b>\$79.41</b>
—% change	129.5%	75.8%	60.3%	40.1%	23.9%	22.0%
—% of total retail sales	1.6%	2.5%	3.5%	4.2%	4.6%	5.0%

Note: converted at the exchange rate of US\$1=INR64.12; excludes travel and event tickets; \*includes products or services ordered using the internet via any device, regardless of the method of payment or fulfillment  
Source: eMarketer, Aug 2016

213210 www.eMarketer.com

The current market size of e-commerce is \$20 billion. India remained an underdeveloped retail e-commerce market, with digital commerce accounting only a small part of the country’s total retail sales .eMarketer estimates that retail e-commerce will reach \$23.39 billion in 2016 , with an increase of over 75% in 2015 . Despite such an increased growth rate retail e-commerce will account just 2.2% of total retail share. According to Emarketer report by 2020 e-commerce will contribute 5% of total e-commerce sale of the total retail sales in India .



(SOURCE – STATISTA.COM)

India is a big e-commerce market place now with every age group comforting transaction online. E-commerce industry in India is growing rapidly in India and is expected to contribute 1.61% of global GDP by 2018 .

In India, cash on delivery remains the most suitable and used options among the citizens of India .more than 65% transactions are paid via COD . Apart from COD , net banking , credit and debit card constitute around 15% of total transaction across Indian market . Only few transactions are done via EMI or E-wallets. Though in the coming times though role of E-wallets in e-commerce will increase significantly but still C.O.D will remain most used option in Indian market. Ever since involvement of C.O.D option in India , the rate of growth of e-commerce in Indian market has increased significantly . thus modes of payment also contribute significantly towards the growth of e-commerce in India . According to Goldman Sachs there will be more increase in e-commerce sales in India and thus will contribute 2.5% of gdp by 2030

YEAR	B2C E-COMMERCE AS % OF GDP IN INDIA
2009	0.13%
2010	0.12%
2011	0.14%
2012	0.15%
2013	0.16%
2014	0.18%
2015	0.18%
2016	0.20%
2017	0.21%
SOURCE- (STATISTA.COM)	

With the above table we can easily see how growth of e-commerce has increased significantly and thus now contribute towards GDP of India of e-commerce sector in Indian economy has also increased.

There is an upward trend in a increase of e-commerce sales in India and internet penetration in India and thus results in a increase in a Contribution of e-commerce in India’s GDP.

#### **4.6 Government Initiatives Supporting The E-Commerce Growth In India**

The role of government in increasing the the growth of e-commerce is very important and plays huge role in the growth of e-commerce in Indian market . It is the government policies and reforms which not only affects the foreign investment and mindset of investors across the globe, but it is the people who also affects from the governmental policies. since 1991 when government of India opened its economy with the introduction of LPG ( Liberalization , privatization and globalization ) the Indian people started enjoying the benefits of open economy Since 1995 when internet was first introduced for e-commerce purpose in India .

Since 2014 government of India has announced various initiatives namely

- Digital India
- Make in India
- Start-up-India
- Skill India
- Innovation fund

The proper functioning of and effective implementation of these program will certainly boost the growth trend of e-commerce in India .

- In the union budget of 2017-18 government has allocated us\$1.55 billion to BharatNetproject . According to which village will also be accessible to high speed internet and Wi-Fi hotspots and digital services at very low tariff in rural and panchayatlevels .
- Government of India has announced the launch of BHIM app, it will increase the digital payment in the country .it has been adopted by more than 12.5 million people of India . For promotion of this app government of India has announced 2 scheme for promotion of this app. they are -
  - 1- Referral bonus scheme for individual
  - 2- Cashback scheme for merchants
- The government of India has distributed rewards worth of RS 153.5 crore to more than 1 million citizens or say customers for embracing digital payment under scheme of Lucky GrahakYojana and Digi – dhanvyaparyojana.

- Government Of India has put lot of money and reforms which have impacted in growth of e-commerce in India . Not only growth but also has increased the standard of living of people. With the unemployment rate decreasing and rate of literacy is increasing over time , one thing which Gov. of India is currently focusing is on growth of entrepreneurs in India . Thus start up India is encouraging growth young entrepreneurs. Thus government of India has also launched various initiatives like UDAAN , UMANG , START-UP INDIA PORTAL etc
- The government of India has taken steps to provide funds through “ Fund of Funds” scheme which is actively working in Indian scenario and thus helping out MSME also .
- Role of FDI plays important role in the growth of e-commerce industry in India . Earlier investment rate in India was considerably very low which thus signifies low e-commerce growth across nation. Since FDI IN B2B e-commerce is 100% FDI allowance which means more investment, but FDI in B2C is still restricted because of governmental norms. Despite of all the government restrictions investments are made in Indian market because there are lot of opportunity in Indian market which can be be proper utilized can lead to more profits . thus investment and FDI polices have an huge impact . investors like –
  - 1- Idgvc Partners
  - 2- Tiger Global Management
  - 3- Accel Partners
  - 4- Index Ventures
  - 5- Sequoia Capital
  - 6- Alibaba
  - 7- Temasek Holdings
  - 8- Forerunner Ventures

Are some of the major investors in e-commerce industry in India under government e-commerce policies. In India 2015 , there was highest ever funding with \$11.3B . Though in India FDI in multi brand retail companies is not allowed yet , Though some firms uses PROMOTIONAL FUNDING which is an indirect route for funding when FDI is restricted is prevalent in India . Thus 100% FDI in B2C is good start for investors to know the market size and opportunity in Indian market and thus more investment and FDI will surely increase the growth of e-commerce in Indian market .

- RESERVE BANK OF INDIA has decided to allow “inter-operability” among prepaid payment instruments (PPIs) such as e-wallets will encourage cashless economy and thus eventually more use of e-commerce in Indian market .
- TAX SYSTEM AND INTRODUCTION OF GST is another government incentive/ scheme which will increase e-commerce growth in India in coming years .with the unified tax system it decreases the cascading of tax which in return simplifies the supply chain management side of e-commerce also . thus e-tailing becomes easier and sometimes in some industry cheaper also which gives manufactures and retailer to expand their business across India . With uniformity in tax , it will help in expanding the positive side of e-commerce across India and thus will not favour any particular state . Though in India TIER1 cities are more prone of e-commerce as their average order value is RS – 1544 and in TIER 2 is RS 1157 and RS 1033 in TIER3 cities in India according to IBEF report (source – ibef.com) . Thus Tax system also plays important part in e-commerce growth in India . India ranked 119<sup>th</sup> position in 190 countries in estimator of “paying taxes” thus which needs to be decreased .thus because of which business becomes hard and difficult for retailers and thus investors doesn’t willing to invest more .
- E-GOVERNENCE is another important scheme or initiative taken by government of India . It will also boost the e-commerce growth and thus will also bring transparency among the citizens of India . India in EGDI index ranked very low were UNITED KINGDOM AND AUSTRILIA have highest rank in EGDI with index score of 0.92 and 0.91 respectively.
- Government of India to set up apex cybercrime coordination centre . – after having 1,44,496 cyber security attacks in India during 2014-16 there is plan to set up cybercrime coordination centre which will help in resolving the issues of cybercrime and thus try to nullify it . states should also open district level cybercrime coordination centre in order to increase efficiency and resolve issues and increase e-commerce growth in India . Phishing, scanning or probing, website intrusions and defacements, virus or malicious code are some types of cybercrime .After ths year budget list , there are rumors that government of India will start allocating some funds for cyber security , which will not only increase digital and internet penetration but will also aid e-commerce growth .

Country	E-COMMERCE AS PERCENTAGE OF TOTAL RETAIL SALE(X)	LITERACY RATE OF THE COUNTRY(Y)	R <sub>x</sub>	R <sub>y</sub>	D=R <sub>x</sub> -R <sub>y</sub>	D*D
uk	14.50%	99.02%	2	1	1	1
INDIA	1.80%	74.04%	5	5	0	0
BRAZIL	2.80%	92.60%	4	4	0	0
CHINA	15.90%	96.40%	1	3	2	4
s.korea	9.80%	97.90%	3	2	1	1
						D*D=6

4.7 Data Analysis

- In this research paper we will find out relation between e-commerce growth in any country and its literacy rate . Thus to find out we used data technique of spearman rank correlation method. where we have E-commerce as percentage of total retail sale denoted as (x) and literacy rate of the country denoted as (y). Here D= difference between the 2 ranks in which Rx is rank of x indicator likewise Ry is the rank of y indicator .

$$1 - \left( \frac{6 \sum d^2}{n(n^2 - 1)} \right) = 1 - \left( \frac{6 \times 6}{n(n^2 - 1)} \right)$$

Coefficient (z) =  
 = 1 - 6\*6/125-5  
 = 1- 36/120  
 = 1 - 0.3  
 = 0.70

here n=6

As n=5 we have z = 0.7 . This indicate a strong positive relationship between the ecommerce as percentage of total retail sale and literacy rate of the nation . That is more the literacy rate of the nation more will be the e-commerce as percentage of total retail sale in the nation and vice versa.

In this research paper we will also try to find out the correlation between unemployment rate and B2C e-commerce as percentage of GDP in India . As in India unemployment rate was increasing and people below poverty line find hard to use the benefits of e-commerce in India . Though in the earlier chapter we saw that there was increase in mobile penetration in India which somehow does impact in the growth of e-commerce sales in India . with this correlation between India unemployment rate and e-commerce as percentage of gdp in India , there is link between these 2 indicator need to find out using correlation analysis

year	e-commerce as percentage of gdp in India	Indiaunemployment rate
2009	0.13	3.91
2010	0.12	3.55
2011	0.14	3.54
2012	0.15	3.62
2013	0.16	3.57
2014	0.18	3.53
2015	0.18	3.49
2016	0.2	3.46
2017	0.21	3.4
		-0.674043437

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

#### Pearson correlation coefficient

Using above formula we got  $r = -0.67403$ . the (-) negative sign implies that with the increase in one quantity, other quantity decreases and vice-versa. Which pretty much explains my model. In my research paper as with the increase in the percentage of e-commerce sales in India, the unemployment rate in India decreases, as more and more jobs are required when there is an increase in e-commerce growth and thus needs jobs and these unemployed people will get jobs and thus there will be a decrease in a unemployment level. Thus there can be increase in job in logistics and delivery and customer care, IT AND MANAGEMENT and thus unskilled labor will also be needed while upgrading infrastructure if there is increase in a e-commerce growth in India. here  $r = (-0.67)$  signifies strong negative correlation between the two indicators. Thus according to ET BUREAU, rise in e-commerce could create net of 12 million jobs in a country over a decade which will decrease unemployment level and increase e-commerce growth in India, which can be easily understood from this model

#### 4.8 Findings

- 1- There is an increase in digital penetration in India i.e. more smartphones are utilized by the people of India which tend to increase m-commerce growth in India.
- 2- There is an increase in internet penetration in India. India ranked 2<sup>nd</sup> in most internet users in the world
- 3- There is an increase in an e-commerce trend in India. With an increase in a contribution of e-commerce in India's GDP.
- 4- Government are making necessary incentives and schemes to promote digitalization and thus encouraging e-commerce growth in India
- 5- E-commerce of the nation is linked with the literacy rate of the nation. with more literacy and educated people there will be more e-commerce growth in a country.
- 6- Negative correlation between unemployment and e-commerce growth in India.

#### V. Conclusion

Through the study of research paper we came to know how important is e-commerce industry currently in the world. With context of India we also try to find the upward trend of growth of e-commerce in India, and also increase in m-commerce and digital penetration in India. Government policies and initiatives has also led to increase of e-commerce in India over years. According to survey after demonization, role of cashless economy in India has increased significantly, thus the role of internet also likewise other such government policies have also had a major impact. a lot have been done and a lot has to be done when it comes to e-commerce industry in India. Also we study impact of literacy rate and unemployment rate on the growth of e-commerce industry in India. also there is significant need to increase the literacy rate in India and also spread awareness among rural people in India about cashless economy and role of internet in India in today's world. With need of more allocation of money towards cyber crime and strict law's need to be made, not only to make this process more secure but also reliable. In this research paper we went through the trend of e-commerce in India which is rising significantly and also how service provider like 4G, 3G helped to increased the digital penetration in India which thus helped to increased the e-commerce and m-commerce sales in Indian economy. Likewise government had also played huge role through different laws and policies towards the growth of sales via internet.

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