E-commerce Trends in India in Global Perspective in Light of Digital India Initiatives

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Abstract

The current markets globally are dynamic with fast changing technology and organizational setups. The speed of this change is highest in India. In current global environment, India has already emerged as a potentially huge retail market due to high middle-class population having high disposable income as a result of economic reforms started way back since 1990’s. The current trend in India which is e-business, is the result of growth of information technology in all forms of the business. Due to the growth in IT along with telecom industry and mobile market, India is on the fast track. Businesses are moving from person driven to person independent where in products and services are getting marketed and distributed in ‘e’ – way and slowly moving on to ‘m’ platform i.e. mobile platform. Till last 5 years these technological advancements were visible in urban India, but with the Digital India Initiative, where in internet is targeted to reach every village in India, it will open-up access to very huge potential market. To take advantage of this, one has to understand the environment and buying preferences of Indian population.

Key Words: Digital India, e-business, e-commerce, m-commerce, online purchases
1. Introduction

With the poor economic conditions of most of the countries in world, India is one of the few relatively strong economies which is still in growth phase. Moreover, world is looking at India as the biggest market segment. The primary reason for this is India is having population almost 1.3 billion with peculiar characteristics. Almost 31% of this population is from urban area and consists 0.1 billion Gen Y population most of which is tech savvy and with high disposable income at hand. Thus as mentioned by P. Chhabra in paper ‘A study on Gen Y & its effect on markets & brands’ future markets will be driven by Gen Y.

Though the internet penetration is increasing in India but with global average which is 50% according to internetworldstats, international telecommunication union, internetlivestats, India is still behind with only 35% penetration. UAE tops the list with 99% followed by Japan with 93% and UK at 3rd position with 92% penetration.

Overall environment is also in favor of e-business and hence e-commerce which is one of the most important components of e-business is strengthening its roots in India. Government of India is also contributing to this growth with one of the critical initiative where in government is focusing on digital revolution in the country. This is flag ship project of Prime Minister of India Mr. Narendra Modi which is know by the name ‘Digital India’. With Digital India initiative, population which is in rural India which is 69% i.e. 833 million will be digitally equipped. Out of this 26% i.e. 217 million population is Gen Y which is potential e-commerce/m-commerce customers. With digital India initiative, India can certainly be in a position to reach to the tops of list of internet penetration.

Direct selling is one of the fastest growing non-store retail formats in India majority of the transactions here happen through e-commerce mode. According to report by KPMG, direct selling Industry in India has the potential to engage 18 million Direct Sellers by 2025 and to reach a size of $640 million by 2025 which is huge growth.

While the environment is very much positive from e-commerce perspective, vendors operating in this environment certainly have to understand the behavioral aspect of the Indian consumers in e-commerce space to maximize their benefit.

2. Objectives

There is a considerable change in e-commerce market potential in Indian due to Digital India initiative. Also it is equally challenging also to cater to the need of this without understanding the consumer preferences. Thus objectives for the study are summarized as below:-

1. To analyze potential benefits of Digital India initiative of government of India from global e-commerce perspective.

2. To study the consumer preferences on e-commerce platform for product categories and preference for web site / mobile usage.
3. Research Question

How Digital India initiative can impact e-commerce growth in India and study the consumer behavior doing purchase on e-commerce platform with respect to category preferred and device preferred.

**Hypothesis 1: Consumer Preferences for Online Purchase**

1.1: Grocery, Fruits & Vegetable, Food & Beverages is the preferred category for Online purchase
1.2: Home Care and Personal Care is the preferred category for Online purchase
1.3: Health & Beauty, Skin Care, Pharma is the preferred category for Online purchase
1.4: Books & Music is the preferred category for Online purchase
1.5: Fashion - Cloths & Accessories is the preferred category for Online purchase
1.6: Home & Living is the preferred category for Online purchase
1.7: Computer Accessories, Data Storage, Camera & Optics is the preferred category for Online purchase
1.8: Mobile phone & Accessories is the preferred category for Online purchase
1.9: Audio, Home Entertainment & Other Electronics is the preferred category for Online purchase
1.10: Baby & Kid Care is the preferred category for Online purchase

**Hypothesis 2: Mobile apps is preferred way of availing products and services on e-commerce platform.**

4. Literature Review

As discussed earlier, due to the growth in IT along with telecom industry and mobile market, India is on the fast track of e-commerce. A report on digital commerce by the Internet and Mobile Association of India highlights the expected growth. Digital Commerce market in India was valued at USD 8.3 million in December 2013 and grew at 53% through 2014 and reached USD 12.68 million by the end of December 2014. The industry was estimated to grow further at a rate of 33%. According to other report by Internet and Mobile Association of India, 420 million internet users among 3.8 billion internet users across the globe will be from India by 2017 which is almost 11% of global number.

Another aspect of internet is the speed. Based on the data sourced from Akamai state of internet report, the global average speed of internet is 6.3 MBPS. India is behind the global average having 4.1 MBPS as its average speed.

Internet can be accessed either from laptops / desk tops or from mobile. Based on the statcounter, Jan.2017 data, India is at 2nd position for mobile share of web traffic with 79% just behind Nigeria who tops the list with 81%. The global average is 50%.
The e-commerce growth is consistent since quite some time now. In one of the report by Accel Partners in India had pointed out in 2014 that there is significant increase in average order value on e-commerce platform along with users becoming more comfortable on online purchases. Fashion category sales has doubled in 2014 since 2012. There is increase in mobile shopping also seen over last few years, potential increase of women influenced sales. Accel partners report has also pointed out the start of penetration of e-commerce from Mega cities to tier 1 cities to tier 2 cities in India.

According to Forrester, with increase of smart phone users, by 2020 every 1 in 5 sales will originate from data collected through mobile devices.

As discussed by Channana, N., & Goele, S. in their paper on *Future of E-Commerce in India*, stated essential factors identified primarily are convenience, return policy, location based services, payment options, price comparison.

Mukesh, Bansal founder of *Myntra.com* in their article on “e-commerce in India – Present and Future” talks about game changing factors in e-commerce industry like Cash on delivery, customer experience for building trust.

Next important factor which will have huge impact on overall digital scenario in India and e-commerce/m-commerce will be Digital India initiative of Government of India. Government of India has come up with Digital India website giving the details of its vision and mission statement and also all of the initiatives which are part of this massive movement. It also focuses on involving community at large to contribute to this initiative in every possible way. Its main focus is on improved infrastructure, simplification of government approval processes and increasing the digital literacy across the country with aim of transforming India not only in urban areas but more in Rural India where majority of the population is.

5. Research Methodology

Research method is the broad term comprises of different methods used for data collection and data analysis which are core. It primarily covers the research approach, method of data collection, sample size and ethical considerations.

**Data Collection:** Online questionnaire was prepared for primary data collection. This questionnaire was sent electronically randomly and data was collected. Based on Krejcie and Morgan table for infinite population 384 is considered sufficient sample size for infinite population. Since questionnaire was sent online we could reach to quite large number and received responses from 556 consumers.

The census data was part of secondary data which was collated from the census site of government of India based on the latest census done in 2011. Also information related to Digital India was sourced from Digital India web site of government of India.
Statistical Tools Used: The SPSS ver 24 has been used as statistical tools for data collection, tabulation and analyses like

a. Pie-Chart: It is a pictorial diagram in the form of circles where the whole area represents the aggregate an area of different sectors of the circles when divided into several parts. In this work, pie-charts have been used to show the values in percentage, of the respondents, regarding website and mobile app usage preference.

b. Multiple bar diagram: It is pictorial diagram in form of bar chart depicting multiple characteristics of the data at one go. This is used to represent the different categories for which what is the distribution of preference for transaction among options like e-commerce website, through company owned show room or any shop is fine for same.

6. E-commerce Scenario

a. Global scenario according to extrapolated data from statista digital market outlook, e-commerce industry and data from emarketer as of January 2017

i. Population – 7.476 Billion
ii. Number of internet users – 3.7 Billion
iii. Online / e-commerce shoppers – 1.61 Billion
iv. E-commerce penetration – 22% (number or purchaser / total population)
v. Total value of e-commerce market in 2016 (in US$) - $1.915 trillion

b. Indian scenario based on data points from Telecom Regulatory Authority of India - TRAI, Indian Association of Mobile Internet and Mobile Association of India - IAMAI, National Payment Corporation of India – NPCI and e-marketer and companies

i. Population – 1.3 Billion
ii. Number of internet users – 420 Million
iii. Online / e-commerce shoppers – 60 Million
iv. E-commerce penetration – 4% (number or purchaser / total population)
v. E-commerce – $16 billion

7. Digital India

a. Digital India Overview

Digital India is a flagship project of government of India focusing on transforming India using digital technology. There are 9 pillars identified on which Digital India initiative is based up on

1. Broadband Highway

a. Broadband for all – Rural - 2,50,000 village Panchayats would be covered under the National Optical Fibre Network (NOFN)
b. Broadband for all – Urban - Virtual Network Operators would be leveraged for service delivery and communication infrastructure in new urban developments and buildings would be mandated.

c. National Information Infrastructure (NII) - NII would integrate the network and cloud infrastructure in the country to provide high speed connectivity and cloud platform to various government departments up to the panchayat level. These infrastructure components include networks such as State Wide Area Network (SWAN), National Knowledge Network (NKN), National Optical Fibre Network (NOFN), Government User Network (GUN) and the MeghRaj Cloud.

2. Universal Access To Mobile Connectivity
   a. This initiative focuses on network penetration and filling the gaps in connectivity in the country.
   b. There are around 55,619 villages in the country that do not have mobile coverage.
   c. As part of the comprehensive development plan for North East, providing mobile coverage to uncovered villages has been initiated.
   d. Mobile coverage to remaining uncovered villages would be provided in a phased manner by 2018.

3. Public Internet Access Program
   a. The two sub components of Public Internet Access Programme are Common Services Centres (CSCs) and Post Offices as multi-service centres.
   b. Common Service Centres - CSCs would be strengthened and its number would be increased to 250,000 i.e. one CSC in each Gram Panchayat for maximizing delivery of e-Services to the citizens.
   c. Post office as multi-service Centres - A total of 150,000 Post Offices are proposed to be converted into multi service centres.

4. E-governance – Reforming government through technology
   a. Government Process Re-engineering using IT to simplify and make the government processes more efficient is critical for transformation to make the delivery of government services more effective across various government domains and therefore needs to be implemented by all Ministries/Departments.
   b. The guiding principles for reforming Government through technology are
      i. Form simplification and field reduction
      ii. Online applications and tracking
iii. Online repositories - Use of online repositories e.g. for certificates, educational degrees, identity documents, etc. should be mandated so that citizens are not required to submit these documents in physical form

iv. Integration of services and platforms Integration of services and platforms e.g. Aadhaar platform of Unique Identity Authority of India (UIDAI), payment gateway, Mobile Seva platform, sharing of data through open Application Programming Interfaces (API) and middleware such as National and State Service Delivery Gateways (NSDG/SSDG) should be mandated to facilitate integrated and interoperable service delivery to citizens and businesses.

v. All databases and information should be in electronic form and not manual.

5. E-kraanti

a. There are 44 Mission Mode Projects under e-Kranti programme.

b. These mission mode projects are grouped into Central, State and Integrated projects.

c. Central MMP

i. Total – 15

ii. Delivering services – 9

iii. Delivering services partially – 1

iv. Under implementation – 1

v. Design and Development – 2

vi. Design stage – 2

d. State MMP

i. Total – 17

ii. Delivering services – 1

iii. Delivering services partially – 10

iv. Under implementation – 2

v. Design and Development – 0

vi. Design stage – 4

e. Integrated MMP

i. Total – 12

ii. Delivering services – 5

iii. Delivering services partially – 3

iv. Under implementation – 0

v. Design and Development – 1
6. Information for All
   a. Open Data platform facilitates proactive release of datasets in an open format by the ministries/departments for use, reuse and redistribution.
   b. Government shall pro-actively engage through social media and web based platforms to inform and interact with citizens. MyGov.in, a platform for citizen engagement in governance, has been launched.
   c. Online messaging to citizens on special occasions/programs would be facilitated through emails and SMS.

7. Electronics Manufacturing
   a. This pillar focuses on promoting electronics manufacturing in the country with the target of NET ZERO Imports by 2020.

8. IT for Jobs
   a. This pillar focuses on providing training to the youth in the skills required for availing employment opportunities in the IT/ITES sector.
   b. IT Trainings to people in smaller towns and villages
   c. The target of this component is to train 10 million students from smaller towns & villages for IT sector jobs over 5 years.
   d. Training Rural 0.5 million rural workforce on Telecom and Telecom related services.

9. Early Harvest Programs
   a. Projects which are to be implemented within short timeline
      i. IT platform for messages
         1. A mass messaging application
         2. 13.6 million mobiles and 2.2 million emails id are part of database
      ii. Government greetings to be e-greeting
      iii. WI-FI in all universities
      iv. Secure email within government
      v. Public wi-fi hotspots - Cities with population of over 1 million and tourist centres would be provided with public WI-FI hotspots to promote digital cities.
      vi. School books to be e-books
      vii. SMS based weather information and disaster alerts
      viii. National portal for lost and found children
b. Digital India Vision

The vision statement of Digital India initiative is

To transform India into a digitally empowered society and knowledge economy.

There are 3 key areas of for achieving Digital India Vision

a. Digital Infrastructure as a Core Utility to Every Citizen
b. Governance and Services on Demand
c. Digital Empowerment of Citizens

As a part of digital infrastructure as a core utility to every citizen, major need for e-business is being taken care of that of high speed internet availability. Cradle to grave digital identity will contribute to the traceability of individual along with stated vision ensures safe and secure digital environment. Mobile phone and bank account enabling the citizen for digital payment.

As part of governance and services on demand, focuses on seamless integration of services across various departments or jurisdiction. Its other important focus is on availability of services real time from online and mobile platform. Its other main objective is also of digitally transformed services for improving ease of doing business. Making financial transactions electronic & cashless

The third key focus area is on citizens to make them digitally empowered. This will be achieved by educating masses on digital enablement.

c. How Digital India will Impacts E-business and E-commerce

Though Digital India initiative has its own agenda, it certainly has created huge market potential for online business i.e. e-business and e-commerce. The main challenges for e-business are

1. Availability of high speed network:
   a. As part of broadband highway, 2,50,000 village Panchayats would be covered under the National Optical Fibre Network (NOFN).
   b. Currently the minimum speed is 510kbps and average speed of 4 MBPS the immediate target is to increase the minimum speed 4 time to 2mbps so that 5G network can be established improving the average speed also.
   c. 400,000 Public Internet Access Points
d. Wi-fi in 2.5 lakh schools, all universities

2. Knowledge to use digital media:
   a. Increase in internet Penetration from 35 % to 70%
   b. IT Trainings to people in smaller towns and villages

3. Highly integrated services:
   a. All the services will be integrated under Digital India initiative
   b. All financial services including banking are also integrated ensuring Payment process linkage with logistics in e-commerce
4. Ease of operations:
   a. All forms are to be simple and requiring minimal information
   b. Reduction of Number of clicks as all personal information is digitally stored and linked

5. Online payment option: Since all the services are integrated, multiple payment options available including credit card, debit card, net banking, BHIM app, e-wallet and cash on delivery.

6. The table1 above for demographic Distribution of Indian population shows the urban population is just 31% which is primarily exposed to e-business. Where 69% of Indian population are still away from e-commerce. With digital India initiative which targets to reach to every village will increase the penetration and hence potential market for e-commerce.

8. The Current Status with Regards to E-commerce

   a. Products Preferred on E-commerce Platform

   The current status in India with regards to e-commerce which is key component of e-business depicts high potential in urban area itself for variety of products and services which are still not that preferred categories for online purchases.

   There are various options in India when it comes to purchase of the products. In city area there are Hyper Marts/ Super Markets, Departmental Stores, malls where in there are company owned shops. There are roadside Mom-and–pop Stores/small shops owned by single owners across various categories of products from grocery, gift articles, cloths and many other day-to-day products which are being used by all. Also along with this small single owner shops there are some products which are sold by roadside traders who doesn’t own any space but they do stand along the road side for selling their products.

   Now with e-commerce there is an option of purchasing the products online. Product category wise there are preferences of the consumer with regards to the sourcing of the products. There are various factors behind these preferences, cost, quality, refund policy, time saving etc. to name a few, discussions of which is out of the scope for this paper

   Data was collected through questionnaire asking the preferred option to purchase products from particular category from the below options

   1. E-commerce Website

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**Table 1. Demographic Distribution**

<table>
<thead>
<tr>
<th>Age</th>
<th>Total</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>Persons</td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>I</td>
<td>All Ages %</td>
<td>100%</td>
<td>51%</td>
</tr>
<tr>
<td>II</td>
<td>Gen Y %</td>
<td>27%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Source: Based on the Census data of 2011
2. Company Owned Shop /Showroom
3. Any other Shop

Table 2: The Frequency Distribution of Respondents According to Most Preferred Option for Purchasing Below Category of Products from

<table>
<thead>
<tr>
<th>Most Preferred Option for Purchasing Below Category of Products From</th>
<th>E-commerce Website</th>
<th>Company Owned Shop /Showroom</th>
<th>Any other Shop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grocery, Fruits &amp; Vegetable, Food &amp; Beverages</td>
<td>117</td>
<td>218</td>
<td>221</td>
</tr>
<tr>
<td>%</td>
<td>21.0</td>
<td>39.2</td>
<td>39.7</td>
</tr>
<tr>
<td>Home Care &amp; Personal Care</td>
<td>160</td>
<td>301</td>
<td>95</td>
</tr>
<tr>
<td>%</td>
<td>28.8</td>
<td>54.1</td>
<td>17.1</td>
</tr>
<tr>
<td>Health &amp; Beauty, Skin Care, Pharma</td>
<td>183</td>
<td>270</td>
<td>103</td>
</tr>
<tr>
<td>%</td>
<td>32.9</td>
<td>48.6</td>
<td>18.5</td>
</tr>
<tr>
<td>Books &amp; Music</td>
<td>308</td>
<td>154</td>
<td>94</td>
</tr>
<tr>
<td>%</td>
<td>55.4</td>
<td>27.7</td>
<td>16.9</td>
</tr>
<tr>
<td>Fashion - Cloths &amp; Accessories</td>
<td>205</td>
<td>272</td>
<td>79</td>
</tr>
<tr>
<td>%</td>
<td>36.9</td>
<td>48.9</td>
<td>14.2</td>
</tr>
<tr>
<td>Home &amp; Living</td>
<td>167</td>
<td>309</td>
<td>80</td>
</tr>
<tr>
<td>%</td>
<td>30.0</td>
<td>55.6</td>
<td>14.4</td>
</tr>
<tr>
<td>Computer Accessories, Data Storage, Camera &amp; Optics</td>
<td>298</td>
<td>197</td>
<td>61</td>
</tr>
<tr>
<td>%</td>
<td>53.6</td>
<td>35.4</td>
<td>11.0</td>
</tr>
<tr>
<td>Mobile phone &amp; Accessories</td>
<td>327</td>
<td>185</td>
<td>44</td>
</tr>
<tr>
<td>%</td>
<td>58.8</td>
<td>33.3</td>
<td>7.9</td>
</tr>
<tr>
<td>Audio, Home Entertainment &amp; Other Electronics</td>
<td>267</td>
<td>223</td>
<td>66</td>
</tr>
<tr>
<td>%</td>
<td>48.0</td>
<td>40.1</td>
<td>11.9</td>
</tr>
<tr>
<td>Baby &amp; Kid Care</td>
<td>169</td>
<td>264</td>
<td>123</td>
</tr>
<tr>
<td>%</td>
<td>30.4</td>
<td>47.5</td>
<td>22.1</td>
</tr>
</tbody>
</table>

Diagram 1: Multiple Bar Diagram for the Frequency Distribution of Respondents According to Most Preferred Option for Purchasing Below Category of Products from
To Test the Hypotheses 1

The null hypothesis, $H_0$: The percentage of respondents for whom the listed categories are the preferred categories for Online purchase is less than or equal to 75%.

Vs.

The alternative hypothesis, $H_a$: The percentage of respondents for whom the listed categories are the preferred categories for Online purchase is greater than 75%.

The test used is z test for proportion.

<table>
<thead>
<tr>
<th>Most Preferred Option For Purchasing Below Category of Products From</th>
<th>E-commerce Website</th>
<th>Sample Proportion</th>
<th>Z Statistic</th>
<th>P value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grocery, Fruits &amp; Vegetable, Food &amp; Beverages</td>
<td>117</td>
<td>0.2104</td>
<td>-16.96</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Home Care &amp; Personal Care</td>
<td>160</td>
<td>0.2878</td>
<td>-14.53</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Health &amp; Beauty, Skin Care, Pharma</td>
<td>183</td>
<td>0.3291</td>
<td>-13.23</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Books &amp; Music</td>
<td>308</td>
<td>0.5540</td>
<td>-6.16</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Fashion - Cloths &amp; Accessories</td>
<td>205</td>
<td>0.3687</td>
<td>-11.99</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Home &amp; Living</td>
<td>167</td>
<td>0.3004</td>
<td>-14.14</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Computer Accessories, Data Storage, Camera &amp; Optics</td>
<td>298</td>
<td>0.5360</td>
<td>-6.73</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Mobile phone &amp; Accessories</td>
<td>327</td>
<td>0.5881</td>
<td>-5.09</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Audio, Home Entertainment &amp; Other Electronics</td>
<td>267</td>
<td>0.4802</td>
<td>-8.48</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Baby &amp; Kid Care</td>
<td>169</td>
<td>0.3040</td>
<td>-14.02</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
</tbody>
</table>

Since all p values are greater than 0.05, the level of significance; the null hypothesis is accepted.

Conclusion: The percentage of respondents for whom the listed categories are the preferred categories for Online purchase is less than or equal to 75%.

Hence Hypothesis 1: Consumer preferences for online purchase.

1.1: Grocery, Fruits & Vegetable, Food & Beverages is the preferred category for Online purchase

1.2: Home Care and Personal Care is the preferred category for Online purchase

1.3: Health & Beauty, Skin Care, Pharma is the preferred category for Online purchase

1.4: Books & Music is the preferred category for Online purchase

1.5: Fashion - Cloths & Accessories is the preferred category for Online purchase
1.6: Home & Living is the preferred category for Online purchase
1.7: Computer Accessories, Data Storage, Camera & Optics is the preferred category for Online purchase
1.8: Mobile phone & Accessories is the preferred category for Online purchase
1.9: Audio, Home Entertainment & Other Electronics is the preferred category for Online purchase
1.10: Baby & Kid Care is the preferred category for Online purchase

Hence Hypothesis 1 is Rejected.

b. Preferred Way of Availing Products and Services on E-commerce Platform

When it comes to purchasing products from e-commerce web site, as discussed earlier, there are 2 options available.

1. Through mobile app
2. Through web site

With the advancement of technology and tremendous growth of mobile users, mobile has now become one of the primary medium for internet access. To check the shift of e-commerce to m-commerce, hypothesis was formed related to preferred method of online purchase.

Hypothesis 2: Mobile apps is preferred way of availing products and services on e-commerce platform.

The responses of the respondents for the following question are considered to examine the hypothesis2.

Q. What is your preferred mode for Online Purchase?

<table>
<thead>
<tr>
<th>Preferred mode for Online Purchase</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through Mobile App</td>
<td>280</td>
<td>50.4</td>
</tr>
<tr>
<td>Through Website</td>
<td>276</td>
<td>49.6</td>
</tr>
<tr>
<td>Grand Total</td>
<td>556</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 3: Preferred Mode for Online Purchase
To Test the Hypotheses

The null hypothesis, $H_0$: The percentage of respondents preferring mobile app as mode for online purchase is less than or equal to 75%.

$H_a$: The percentage of respondents preferring mobile app as mode for online purchase is greater than 75%.

The test used is $z$ test for proportion.

<table>
<thead>
<tr>
<th>Preferred Mode for Online Purchase</th>
<th>Frequency</th>
<th>Sample Proportion</th>
<th>Z Statistic</th>
<th>P value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through Mobile App</td>
<td>280</td>
<td>0.5036</td>
<td>-7.75</td>
<td>1.0000</td>
<td>Not Significant</td>
</tr>
</tbody>
</table>

If $p$ value < 0.05, the level of significance; the null hypothesis is rejected. Since $p$ value is greater than 0.05, the level of significance; the null hypothesis is accepted.

Conclusion: The percentage of respondents preferring mobile app as mode for online purchase is less than or equal to 75%. Sample proportion indicates that both modes mobile app as well as website equally preferred for online purchase.

Hence hypothesis: Mobile apps is preferred way of availing products and services on e-commerce platform cannot be accepted.

Hence Hypothesis 2 is rejected.
9. Findings

Findings of Objective 1:

1. As compared to global numbers India is quite behind on below attributes
   a. Internet penetration i.e. number of internet users as compared to size of population is very low in India which is just 35% as compared to global average of 55%
   b. e-commerce penetration i.e. number of e-commerce shoppers with respect to size of population is 4% in India again very low
   c. Total value of e-commerce is US$16 million very low in India

2. With Digital India initiative and its vision there is tremendous improvement expected at all levels in India.
   a. The internet penetration will be increased which will bring bigger population from rural India under digital infrastructure. This will be the potential market for e-commerce
   b. Through digital India initiative, all the processes related to business approvals will become easy which will bring more vendors in the market
   c. Digital literacy is expected to increase many folds resulting in more potential customers coming on e-commerce platform
   d. Infrastructure, speed of internet would be critical aspect for e-commerce growth which is the core area of improvement through Digital India initiative.
   e. To support all the digital transactions, infrastructure which plays key role will be at prime focus.

Findings of Objective 2:

a. All the categories under consideration are now being traded through e-commerce platform.

b. P value for all the categories in consideration is greater than 0.05 there is significant level of product purchase for all the categories

c. P value for preference for using mobile app for product purchase is greater than 0.05, it is significant mode of purchase considered for e-commerce.

Findings of Hypothesis 1:

a. Categories ‘Grocery, Fruits & Vegetable, Food & Beverages’ and ‘Home Care & Personal Care’ are preferred by less than 30% of the population

b. Categories ‘Health & Beauty, Skin Care, Pharma’, ‘Fashion - Cloths & Accessories’, ‘Home & Living’ and ‘Baby & Kid Care’ are preferred by greater than 30% but less than 45% of the population

and ‘Books & Music’ are the preferred categories by greater than 45% but less than 60% of the population.

d. Since p values for all the categories are greater than 0.05, the level of significance; the null hypothesis “The percentage of respondents for whom the listed categories are the preferred categories for Online purchase is less than or equal to 75%.” is accepted.

e. Since the 75% is the arbitrary factor considered to be the preferred category for the e-commerce for the purpose of the paper hence even through large number of categories are now being traded through e-commerce platform but still e-commerce is not the preferred platform yet for these categories. Still the products from these categories are purchased through other traditional source for product purchases.

Findings of Hypothesis 2:

a. 50.4% respondents prefer online purchase using mobile app
b. 49.6% respondents prefer online purchase using website
c. Both the options are almost equally preferred by respondents
d. Since P value for preferred mode of purchase using mobile app is greater than 0.05, the level of significance, the null hypothesis, “The percentage of respondents preferring mobile app as mode for online purchase is less than or equal to 75%.” is accepted.

e. The percentage of respondents preferring mobile app as mode for online purchase is less than or equal to 75%. Sample proportion indicates that both modes mobile app as well as website equally preferred for online purchase. Hence hypothesis 2 “Mobile apps is preferred way of availing products and services on e-commerce platform” cannot be accepted.

f. Hence Hypothesis 2 is rejected.

10. Limitation of the Study

The study has below limitations:

- The research is done based on online questionnaire sent to random people.
- Only 10 product categories are considered there can be more categories of products which may be sold on e-commerce platform but are not considered.
- Very limited attributes of e-commerce are considered for the scope of this paper. There are many aspects which can have impact on the preference can be studied further.
- Digital India initiative is just recently triggered activity. Its success or failure will impact the findings.
- Only limited aspect of the consumer preferences is being considered for this paper.
11. Conclusion

In global scenario, India is quite behind on various aspects of e-commerce. The primary areas of concern are internet penetration due to lack of internet infrastructure, speed of internet, digital literacy of users etc. But still India has tremendous potential for growth in e-commerce space with huge population yet un-tapped which is still in rural part of India. Digital India is one of the initiatives of Government of India, success or failure of which will have significant impact on overall target segment of consumers from this rural areas. The digital infrastructure, digital awareness, integrated systems and hence ease of doing business are the key benefits which will be delivered by Digital India initiative addressing major bottlenecks of e-commerce hence making India one of the strongest e-commerce market in the world. Though preference is given to mobile app for online purchase still there is no significant difference between purchase on mobile app or through web site but this can be considered as start of m-commerce. Also there are still not all products preferred to be purchased online. The products like mobile phone and accessories, books and music and other computer and storage accessories are the products which are more preferred over other categories. There is large untapped market and many more number of product categories that can be part of e-commerce space. Hence we can say it is still just the beginning of bigger growth in near future of the e-commerce space in India.

12. Further Research

All the limitations of existing study can be potential area for further research. There are many aspects to e-commerce purchases which includes various other categories of the products. The behavior of the consumer varies from category to category which is not covered in this paper. There are various modes of purchases and payment options for which different consumers have different preferences. This behavior is also not being considered for this study. There are factors like cost, quality, return policy, data security which potentially can impact decision making for online purchase is not considered for the purpose of this paper which can be part of further study.

13. Managerial Implications

This Research is important for professionals working in marketing strategies in e-commerce area. Understanding the potential customer base, understanding the behavior of the target customers is key for marketing professionals. Knowing the preferences for online products, appropriate strategies may be designed while bringing the products in market. The research is also useful for every business owner providing e-commerce platform as he/she would be benefited with the knowledge with respect to customer preferences for online products which he can target the vendors for.
References


