

# ROLE OF TECHNOLOGY AND INNOVATION IN INDUCING THE BUYING BEHAVIOUR OF ONLINE CUSTOMERS – AN EMPIRICAL STUDY

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## 1. ABSTRACT

*Over the last decade, technological innovation has fundamentally transformed the retailer's behaviour in market place. Early contributions to retail focused mostly on developing E-commerce and banking services. Nowadays, businesses and retailers are in a need to keep pace with technological developments as these technologies plays a decisive role in attracting more customers. Moreover, Mobile digital technologies which are more users friendly help to engage the customer effectively. The prime feature of these technologies lies in the capability to provide detailed and updated information on online stores, products and services available in these stores. Key insights from the study reveal how today's online shoppers are driven by technology. Companies have realized that the rapid growth of technology could impact on Internet shopping deeply, and hence Information technology used in the form of the Internet improved better quality of product information through reviews, which help shopper's decision making. A total of 140 respondents between the age group between 17 and 60 years were selected and data collection was carried out using structured questionnaire.*

**Keywords:** *Technological innovation, E-commerce, shoppers decision making, Information technology, online stores*

## 2. INTRODUCTION

### Online shopping behaviour

Rapidly evolving technologies, changing demographics and consumer preferences have created a change in the consumer product industry. With a growing shift in retail industry trends, driven by technology and access to the internet, consumers are now accessing most stores and brands through online platforms.

The growth in online shopping trends, along with global delivery systems, and the easier movement of funds through international banking systems, means retailers who were locally focused now have the

opportunity to serve and communicate with a global audience. New technologies, new customer behaviours via voice, chat, email, social networks, interactions between consumers and companies are constantly evolving and diversifying, along with new ways of communicating via smart phones and other devices. The customer is looking for a personalised experience and retailers will need to deliver in order to stay relevant in an ever-evolving market.

Deploying the latest customer applications and technologies might seem to be the silver bullet to drive purchase and retention, but what the results really tell us is that consumers want online shopping experiences that are personalised, catered to their individual needs and lifestyles.

### E-retail technologies - Drivers of Online consumers

**Real-Time Customization** is a way to provide a different, customized experience to every customer, during every visit. It uses different parameters like purchasing habits, preferences, demographics, and geographic location to personalize messages on the fly.

Consumers are more willing to purchase online and through retail technology, but are still wary of **privacy and security**. Credit card and personal information must be taken seriously by retailers. Companies are increasingly investing in secure POS systems, fraud prevention tools, and data management with encryption.

With customers glued to internet-enabled devices, **digital marketing** becomes more important than ever for retailers connecting with shoppers. Whether it's digital coupons, virtual storytelling, emails, or increased ads, companies are upping their digital marketing game. In fact, the top area for new spending in business is digital marketing. Studying **analytics** is vital to understand the customer. Information, like demographics and customer traffic, allows businesses to make smarter decisions based on customer details, as well as to personalize the customer experience. **Omni channel commerce** is a multichannel approach to shopping that aims to make the customer experience more seamless across in-person and online channels. Walmart is jumping on the omni channel train with its order-by-text service. This delivery service allows customers to order goods via text message to increase convenience. Another example is Neiman Marcus' Snap Find Shop app, in which customers can take a picture of an item in the store and look for it or similar items online. **Augmented Reality (AR)** is completely changing shopping experiences. Consumers can now virtually try on clothes or test products via AR. For example, within Sephora's mobile application, users can virtually sample makeup in real time. By placing filters over their live selfies, users can see what makeup products would look like on their faces, explained Solis in his Leading Trends in Retail Innovation report. **Facial recognition** technology can help retailers better understand customer preferences. According to Forbes, facial recognition can track where customers gravitate within stores, determine customer demographics, and

even prevent theft. By tracking where most customers first go in shops, business leaders can develop a store layout that is most productive for its customers.

### 3. STATEMENT OF THE PROBLEM

There is a huge challenge for online stores to maintain a continued engagement of customers. The technological development not only provides opportunities to online retailers but in some cases disrupts retailer strategies. Customer's attitude and buying pattern frequently change as a result of introduction of new relevant innovative solutions. Online retailers are in a need to develop new strategies and tools to deliver customer expectations across all channels. The primary need is to listen and understand the ever changing customers and translating their needs effectively via technological innovation. Moreover, customers have become reviewers and content creators through blogs and online forums. Analysing the buying behaviour of this modern era customers, who are more aware, tech savvy and effective communicators is the prime focus for online retailers.

### 4. OBJECTIVES OF THE STUDY

1. To determine the relationship between age group and preference benefits
2. To understand the association between gender and customer preference on technology sound online stores
3. To analyse the relationship between the various parameters impacted by technology which influences consumer buying behaviour

### 5. REVIEW OF LITERATURE

**C. Arul Jothi (2017)** stated that social networks influence the behaviour of consumers based on the information available. Many of the customers still prefer to buy through physical mediums.. The important attributes are to purchase online are quality, security of credit/debit cards, and variety of products. In the research it is found that consumers usually spend more than three hours a day on the social media and they focus on information gathering. Consumers require detailed information about the brand so as to evaluate the purchase decision; there is ample amount of information which saves their time by allowing them to make better and quick purchase decision.

**Prodhuturi VenkataVijay kumar (2016)** revealed that shopping is mostly influenced by promotions, offers and discounts. The study highlighted the impact of technology and innovation and customer experiences of consumers at convenience stores. In a volatile economy, providing better customer experience is critical in any company's success. With ever-changing technology in the retail industry,

retailers face challenge in gaining competitive edge from creating added customer value. To accomplish, retailers have to constantly review their marketing strategies.. This study focus on the impact on the customer experience which to increase technology and innovation at retail shopping malls.

**Helal Alsubagh (2015)** discussed about networking through social media and its ability to address customer opinions, thoughts, and perceptions, and share their knowledge and experiences with other users. Online Marketers improve their brand image through these information forums and circulate the information among social media programs and organizational websites. It is a social toll to share and spread information as well as to make content that can help others to participate.

**Sue Yasav (2015)** evidenced that digital technology has changed the retail landscape over the past few decades, and there is every indication that it will be a continuous process. The extent to which digital tools have become integrated into the shopping experience has taken a new level. Retailers has become much more dependent on technology and social media influences which helps them in providing abundant information on customer trends. Retailer's emphasis on digital experience which delight customers in this new environment. Digital marketing tools available to retailers include responsive website design, custom alerts and a compelling content strategy. The seamless integration of these tools into the shopping experience can attract new shoppers to a brand, and result in greater loyalty from existing customers.

**Rohan Samson (2014)** examined the effectiveness of online digital communication as a medium for marketing. It is observed that online digital media is the preferred source of information for those who intend to buy and its use has a positive influence on a potential customers buying decision. It is determined that online information sources are more effective for communicating detailed specifications, features and comparative information about a particular product than print media.

**Elisabeta Ioanăs, Ivona Stoica (2014)** determined that social networks have a role in influencing the behavior of consumers in the virtual environment. The degree of exposure of messages and the variety of information given influences the consumer to make a purchase. Companies should successfully back track mixed marketing policies in order to boost sales and, net turnover and market share. Based on the products and services they promote, the companies may use niche marketing for unique products or to respond to the demand of an increasingly large consumer pool.

**Monika Pathak (2014)** discussed that there is a great change in shopping pattern on account of the rapid advancement in technology and innovation in the field of online shopping. Consumers more effective and efficient in their online shopping behaviour and has elevated businesses to a new level, forcing many to make the necessary adjustments and changes to reach the new market of informed consumers.

## 6. RESEARCH METHODOLOGY

### 6.1 RESEARCH AND SAMPLING METHODS

The research adopts convenience sampling as sampling technique. Descriptive research is adopted as the appropriate research method for the study.

### 6.2 SAMPLING SIZE

**Sample size for the study is 140.** The study is restricted within Chennai city. Data collection was carried out using a structured Questionnaire was circulated online through Google forms and esurv.org for collection of data from target respondents. The study covers the age group of 17 to 60 years, who have past experience in online shopping. The period of study is limited from **October 2018 to November 2018**.

### 6.3 STATISTICAL TOOLS USED

Chi-square test, One way ANOVA, and Correlation are the statistical tools used to analyse the primary data collected.

The One-Way ANOVA ("analysis of variance") compares the means of two or more independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different.

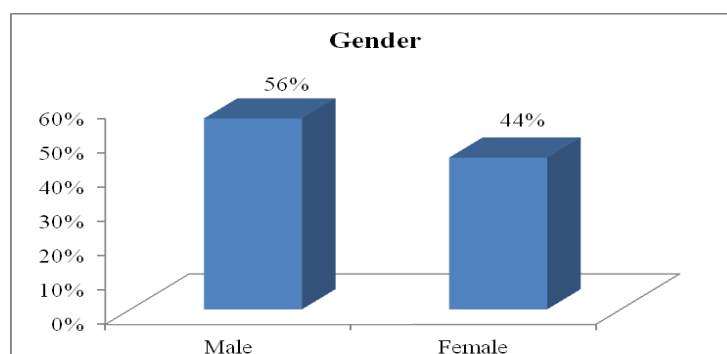
Chi square test is applied when you have two categorical variables from a single population. It is used to determine whether there is a significant association between the two variables. The Chi-square test is often used to test whether sets of frequencies or proportions follow certain patterns. The two most common instances are tests of goodness of fit using multinomial tables and tests of independence in contingency tables

Correlation analysis measures the degree of relationship between the variables under consideration. The measure of correlation called the correlation coefficient. The correlation coefficient,  $r$ , is a summary measure that describes the extent of the statistical relationship between two interval or ratio level variables. The correlation coefficient is scaled so that it is always between -1 and +1.

## 7. DATA ANALYSIS

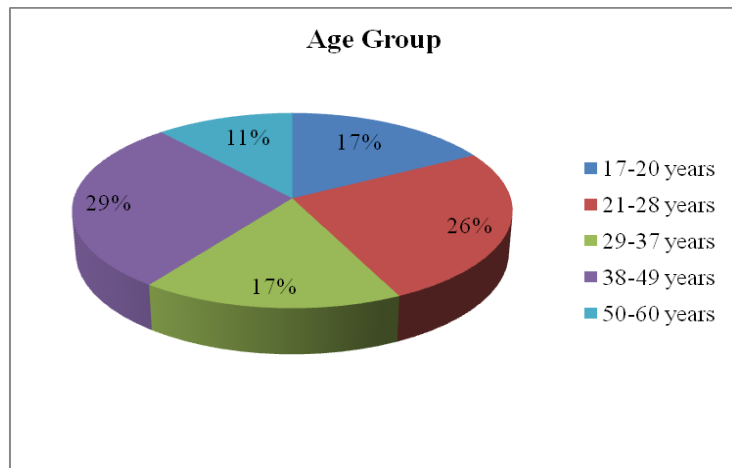
**Table 7.1 Gender**

Gender	Frequency	Percent
Male	78	56%
Female	62	44%
Total	140	100%

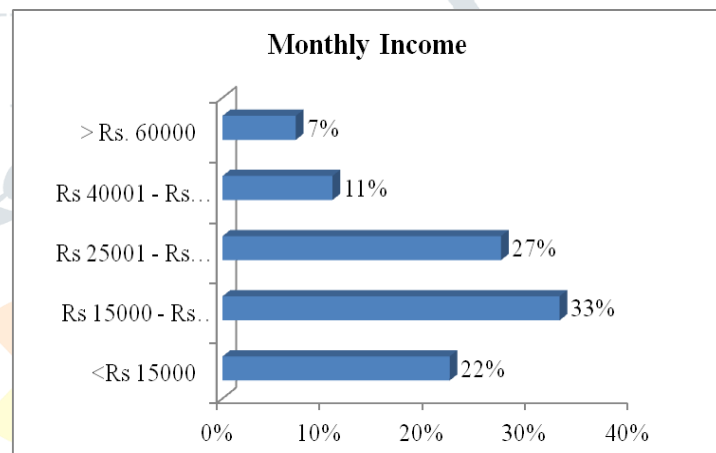


**Table 7.2 Age Group**

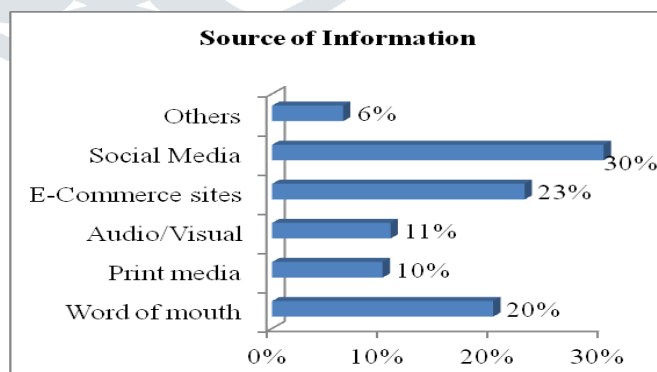
Age Group	Frequency	Percent
17-20 years	24	17%
21-28 years	36	26%
29-37 years	24	17%
38-49 years	40	29%
50-60 years	16	11%
Total	140	100%

**Table 7.3 Monthly Income**

Monthly Income	Frequency	Percent
<Rs 15000	31	22%
Rs 15000 - Rs 25000	46	33%
Rs 25001 - Rs. 40000	38	27%
Rs 40001 - Rs. 60000	15	11%
> Rs. 60000	10	7%
Total	140	100%

**Table 7.4 Source of Information**

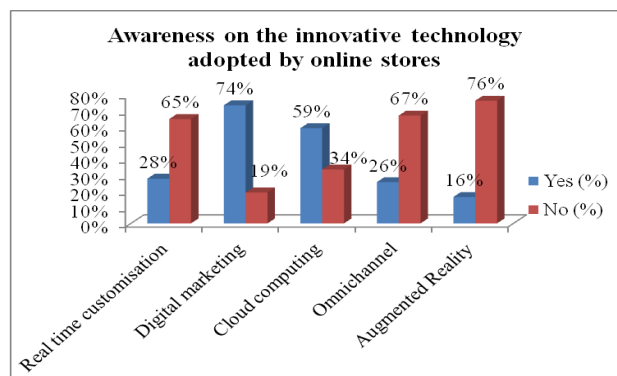
Source of Information	Frequency	Percent
Word of mouth	28	20%
Print media	14	10%
Audio/Visual	15	11%
E-Commerce sites	32	23%
Social Media	42	30%
Others	9	6%
Total	140	100%

**Table 7.5 Awareness on application of innovative technology adopted by online stores**

Awareness on the innovative technology adopted by online stores	Yes	No
Real time customisation	39	91



Digital marketing	103	27
Cloud computing	83	47
Omnichannel	36	94
Augmented Reality	23	107



## 7.6 ONE WAY ANOVA

**Null Hypothesis:** There is no significant difference between age group and perceived benefits driven by technology.

**Alternate Hypothesis:** There is significant difference between age group and perceived benefits driven by technology.

### ANOVA

Perceived benefits driven by technology

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	25.858	4	6.465	7.596	.000
Within Groups	114.885	135	.851		
Total	140.743	139			

p value = 0.000, Since p value is less than 0.05, Reject Null Hypothesis.

**Inference:** There is significant difference between age group and perceived benefits driven by technology.

**Interpretation:** Respondents of different age group have varied opinion on the perceived benefits driven by technology.

## 7.7 CHI SQUARE TEST

**Null Hypothesis:** There is no significant association between gender and preferred online store (based on technical aspects).

**Alternate Hypothesis:** There is significant association between gender and preferred online store (based on technical aspects).

**Gender \* Preferred online store (based on technical aspects)**

### Cross tabulation

			Preferred online store (based on technical aspects)							Total
			Amazon	Flipkart	Ebay	Uber	Paytm	Bigbasket	others	
Gender	Male	Count	32	19	7	4	8	1	1	72
		Expected Count	21.6	12.3	5.7	11.3	10.3	6.7	4.1	72.0

Female	Count	10	5	4	18	12	12	7	68
	Expected Count	20.4	11.7	5.3	10.7	9.7	6.3	3.9	68.0
Total	Count	42	24	11	22	20	13	8	140
	Expected Count	42.0	24.0	11.0	22.0	20.0	13.0	8.0	140.0

### Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	43.947 <sup>a</sup>	6	.000
Likelihood Ratio	48.015	6	.000
Linear-by-Linear Association	35.255	1	.000
N of Valid Cases	140		

a. 2 cells (14.3%) have expected count less than 5. The minimum expected count is 3.89.

P value = 0.000, since p value is less than 0.05, Reject Null Hypothesis.

**Inference:** There is significant association between gender and preferred online store (based on technical aspects).

**Interpretation:** Most of the Male respondents feel Amazon and Flipkart are technically sound online stores whereas most of the female respondents have opted Uber, Paytm and Bigbasket as technically sound online stores

## 7.8 CORRELATION

### Impact of technology in online shopping process

#### Correlations

		Displays relevant product information while product search	Provides a Hassle free Shopping experience	Helps in Effective tracking of ordered products	Supports in prompt Query / Complaint processing	Facilitate in Secured Payment transactions
Displays relevant product information while product search	Pearson Correlation	1	.107*	.486**	.195*	.577**
	Sig. (2-tailed)		.037	.000	.021	.000
	N	140	140	140	140	140
Provides a Hassle free Shopping experience	Pearson Correlation	.107*	1	.327**	.514**	.139
	Sig. (2-tailed)	.037		.000	.000	.101



	N	140	140	140	140	140
Helps in Effective tracking of ordered products	Pearson Correlation	.486**	.327**	1	.605**	.306**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	140	140	140	140	140
Supports in prompt Query / Complaint processing	Pearson Correlation	.195*	.514**	.605**	1	.203*
	Sig. (2-tailed)	.021	.000	.000		.016
	N	140	140	140	140	140
Facilitate in Secured Payment transactions	Pearson Correlation	.577**	.139	.306**	.203*	1
	Sig. (2-tailed)	.000	.101	.000	.016	
	N	140	140	140	140	140

\*\* . Correlation is significant at the 0.05 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Inference:** The coefficient of correlation ranges from 0.107 to 0.605. Hence there is a positive correlation among the parameters impacted by technology.

P value is < 0.05 for all the variables and hence the correlation matrix is significant among the variables.

**Interpretation:** The positive correlation indicates technology has a significant positive impact on the various parameters product search, shopping process, product tracking, query processing and secured payment transaction.

## 8. DISCUSSIONS

### 8.1 FINDINGS OF THE STUDY

Social media, E- commerce site and word of mouth are the major source of information influencing online purchase. Most of the online customers are in the age group of 21-29 years and 38-49 years. Digital marketing and cloud computing are the most familiar technology, while augmented reality is the least familiar technology among online customers. The analysis using statistical tools revealed that technology has positive effect on the shopping behaviour of online customers. Customers also believe that an technology should be involved in developing an effective customer care which promptly handle queries related to products and transaction.

### 8.2 SUGGESTIONS

The online stores should have better mechanisms to inform customer about the innovative technology adopted and its possible benefits. Bringing the feel and look the physical product is a greater challenge for E-commerce sites. Present study make it also amply clear that online consumers have a positive image on the technology aspects and their expectations and preference primarily lies on hassle free and safe online

transaction. Online customers also believe that information provided through social media and reviews are reliable

### **8.3 CONCLUSION**

The present study investigated consumers' preference and attitude about the utility of technology in their online shopping experience. The result shows that these evolving technologies have brought in strong connect with the customers by bridging the gaps between the virtual and physical stores. Therefore it is a need for the online stores to provide an experience of shopping which gives them a sense of trust sharing the information with these online stores.

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