

IN-STORE DIGITIZATION AND TECHNOLOGY ADVOCACY AMONG RETAIL CONSUMERS

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ABSTRACT

The major objective of the study was to determine the factors that influence consumers' choice of the retail store, also about various in-store digitization techniques being adopted across the globe and their influence on store preference of Indian shoppers. To achieve this, a sample of 117 retail shoppers was selected using convenience sampling. The study utilized survey research and descriptive statistics was used to analyse the data collected. Various techniques being adopted were researched about, which are Tablet Technology, Touch screens in in-store kiosks, Augmented Reality, QR Codes, Smart Phone coded tags and Outdoor/Indoor location based services etc. Most shoppers feel that convenience; Modernization and Virtual Reality are three factors that have significant impact on their store preference in future. It is also found that there is a significant difference between how men and women perceive technological up gradation in retail stores in relation to price. It is found that more men are advocators of technology than women and they believe in technology up gradation.

INTRODUCTION

In-store digitization:

With increase in sales on e-commerce sites, it has become very important for the brick & mortar retail stores to explore different ways to engage consumers in the store. The aim of these techniques is to connect with the consumer at all the possible touch points and influence their shopping behavior. The physical stores have to now compete with e-commerce websites in terms of providing an elevated customer experience and provide consumers with a reason to visit their physical store.

Many factors like increase in income and lack of time have led to the increase in customer's expectations from retailers. According to a report published by McKinsey&Company in the year 2014 more than 60 percent of Americans have smartphones and majority of them use their phones to research about different products & their specifications, make comparison and read reviews while they are shopping inside a retail store.

The consumer buying behavior is being greatly influenced by the interaction of consumers with digital platforms. Now consumers are increasingly looking for convenience and choice. The online features like reviews, product assortment and suggestions have empowered consumers to make their buying decisions. There are several features that a retailer can provide in its brick and mortar retail store like visual navigation which is not possible to replicate by online retailers. The findings of the report suggest that nearly a quarter of consumers who shop for apparel feel that digital touch points play a very significant role in the decision making journey of a consumer. Incorporation of in-store digital strategies can have many positive effects on the topline of retailers.

When customers enter the store they come with a great expectation from the retailer, the retailers can bank upon this opportunity by providing a compelling experience to consumers. There are several ways in which the physical retailers can do this, such as providing them with customized promotional offers, helping them to navigate through the store, providing information about merchandise present in the store etc.

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The digitization techniques can be used to perform various functions:

- i. Enhance the overall experience of a customer in the store
- ii. Make good use of the ability or willingness of customer to use digital devices
- iii. Increase the convenience of shopper
- iv. An Omni channel approach can be adopted by the retail store, promoting the online presence of consumer.

Several in-store digitization techniques adopted across the globe are Tablet Technology, Touch screens in in-store kiosks, Digital Signage, Interactive Hangers, Augmented Reality, QR Codes, Smart Phone coded tags, Outdoor location based services, Indoor location based services and In-store Pickup.

Retail Scenario in India:

With contribution of over 10 percent to the GDP and nearly 8 percent of employment in India the retail industry is the largest amongst other industries. The retail players require a heavy initial investment and it is difficult to break-even with the kind of competition that prevails in the market. There has been a revolution in shopping in India because of the changes in buying behaviour of consumers and the quest for convenience. The retail was mostly unorganized for many years but now the organized retail is increasing importance. There is an increased demand for one stop shops, usually large complexes where customers can shop, eat and get entertained under one roof.

By the year 2016, it is expected that Indian retail industry would be worth US\$ 175-200 billion. The future seems to be very promising for the retail industry in India because of the growing market, advancement in technology and favourable government policies.

There are many factors that support the

growth of organized retail in India:

- Rising incomes of people, thus increasing their purchasing power
- Increase in nuclear families
- Rise of upcoming business sectors like the IT and engineering firms
- Changes in tastes and preferences of Indian consumers
- Improvements in infrastructure facilities
- Effect of globalization
- Liberalization of FDI in the retail in India

With increase in number of e-commerce websites, many people are buying online because of the many advantages that they offer like low prices, convenience and saving time etc. But still nearly 90% of the revenues in retail come from brick and mortar stores, thus it has become imperative for retailers to provide an all new experience to its consumers and engage them while in store. The demarcation between online and brick & mortar retail store is fading away as consumers are expecting similar convenience and access to information as in shopping on their desktops or mobiles. According to Forrester research the web was going to influence nearly 54% of all retail transactions, thus making the retailers to work for creating a seamless flow of information across all the channels thereby increasing the significance of Omni-channel retailing. This will help retailers to empower the consumers and motivate sales.

OBJECTIVES OF STUDY

1. To understand the various factors influencing the store preference of a consumer.
2. To find out various in-store digitization techniques used by retail stores across the globe.
3. To study the influence of these in-store digitization techniques on the retail store preference of a consumer.

4. To find out if there is a significant difference between how men and women perceive the adoption of in-store digitization techniques with respect to price.

REVIEW OF LITERATURE

Role of Technology in Retail

The paper (David Prepletaný, 2013) revolves around finding answers to three questions which are:

Can a sustained competitive advantage be achieved by bringing innovations in retail business model? The cases of Burberry, Safeway, Wal-Mart and Tesco were discussed which supported the assumption that innovating in retail business models leads to a sustained competitive advantage. These retailers inspite of severe competition are going strong for several decades.

Would there be a potential influence of new technologies on the introduction of completely new retail formats? Wal-Mart, Burberry, Tesco and Safeway have been leveraging various opportunities offered by technology to engage customers. Tesco is not just a discount store but capitalizes on analyzing data collected about their loyal customers to release targeted promotional messages that have a positive effect on customers.

What are some of the key technologies and trends that have the potential to change the way we shop in retail stores in the future? Now that customers are absorbing a lot of information on their mobile devices and they bring them into the store, it is important for retailers to understand how customers are going to use technology in relation to shopping. Global retailers like Metro, Tesco and Walmart built their competitive advantage by building their business model around it. If how customers use the technology is one side of a coin, the other side would be how and what benefits they expect to enjoy from it.

The future of bricks and mortar stores lie in striking a balance and maintaining

organizational flexibility, together with the monitoring of technology and customer trends. The paper also evaluates the effect of Digital Promotions, Location-Based Applications and Mobile Promotions, Mobile Point of Sale, Mobile Payments and Digital Wallets, Personal Shopping Assistants, Electronic Price Tags and RFID on innovation.

From the extensive review of literature performed they have come to the following conclusions

- Digital coupons and promotions present a potential to affect business model innovation, especially in the years to come.
- Location-based applications and promotions present a potential to affect business model innovation, especially in the years to come.
- Mobile Point of sale technology does not currently present the potential to affect business model innovation.
- Both mobile payments and digital wallets currently do not present the potential to affect business model innovation. Nevertheless, the situation may be vastly different in just a few years' time.
- Even though Personal Shopping Assistants offer several benefits, it is unlikely to lead to business model innovation.
- Even though electronic price tags have several benefits, this technology is unlikely to lead to business model innovation.
- RFID technology has the potential to affect business model innovation now and even more so in the future.

Retailing is an industry which works on slender margins, thus increasing the importance of optimization of processes of logistics, procurements etc (Dr. J. Venkatesh, 2014). Retailers want to leverage the technology to improve their overall offer to the customer. Technology has become an

aggressive weapon in the hands of retailer unlike a decade ago. The paper has focused on the technological influences in retail sector. After analyzing different technologies that are available for retail the author has come to a conclusion that authority of package solutions, the focus on supply chain optimization, and the new constrain towards IT in store operations are three leading trends in the consumption of IT in retail.

They say that there is no doubt about the significant impact of technology on retailing (S.Ramesh Babu* et al., 2012). The technology has advanced rapidly over the years resulting in development of various applications that have deep impact on the retail. The right deployment of the applications/technology will help retailers in saving lot of time. There are several factors that affect the use of technology in retail business which are the financial resources available, kind of business, scope of operations etc. The authors feel that the role of technology in retailing is very less when compared to advanced economies of the world. Retailers like Metro and Wal-Mart have started using RFID technology which facilitates efficient management of inventory. IT systems play an important role in supply chain management, vendor development, merchandising and inventory management for retailers, India has very few IT systems. The annual spends on IT is quite negligible.

The retail sector is faced with many concerns in terms of integrating supply chain, emerging new retail formats; difficulties in managing costs, stock-outs and markdowns; and the erosion of margins and profitability (Bharat P. Rao, 2000). The retailers have moved towards technology to address these concerns. The author discusses about the problems related to supply chain integration, and the role of information technology in solving these problems is explored and also has an overview of different technologies used to improve retail effectiveness.

There is growing importance of internet-centric software and analytical tools that can spread knowledge across the integrated retail

organization, which can also enable physical, online retailers and supply chain intermediaries to answer business related questions.

IN-STORE DIGITIZATION

Today's consumers are now searching, shopping and buying products through various devices (Hewlett Packard Enterprise). The focus has thus shifted to multichannel marketing where in the challenge in the future would be to serve all-channel buyers also called omniconsumer. They expect a consistent relationship across digital channels and brick and mortar stores. With more and more people using digital channels to buy products it is important for brick and mortar stores to engage their customers while in the store. To serve these omniconsumers better retailers must work to develop a responsive, value and customers driven business models. Successful brick and mortar retailers are leveraging advanced technologies to reduce the distinction between digital and physical environment. The retail sector is now going through a transformation, laying foundation and defining the structure of the stores of future. The retailers with foresight are working towards building their digital capabilities to serve consumers better. It is very important for the physical retailers to leverage the new style of business which depends on developing digital capabilities.

There are several researches conducted to find out the implications of digital technology, Gartner conducted a research which shows that 22 percent of organizational leaders indicate they are currently doing some form of digital business. Half of them wish to be in digital business within two years, and within 3 to 5 years, 83 percent expect to be in digital business. The findings of a report published by Deloitte confirm these key trends. According to that research, digital technologies today influence 36 percent, or \$1.1 trillion, of in-store retail sales.

The author discusses about how retailers are finding more ways to incorporate digital

technology into the physical retail experience (Nathan Isaacson, Jan 2015). The author talks about various in-store digital techniques that range from mobile POS, to digital kiosks, to virtual reality; to iBeacon and RFID triggered engagement that includes smart fitting rooms etc. He has taken up cases of various retailers who are using few technologies.

Case of New Balance

In the year 2015 New Balance which is an athletic footwear and apparel brand has set-up an interactive digital kiosk in their stores which allows customers to design their own custom shoes. The skeleton of different kinds of shoe is shown on the screen to which customers can design a wide range of material and color combinations. The kiosk links to the order management, inventory, and manufacturing systems to place the order and begin the custom manufacturing process.

Case of Kate Spade Saturday

In the year 2013 Kate Spade has installed temporary digital storefronts on the front window spaces of empty stores in the New York City. People passing by the digital storefront are allowed to browse various products and place order using the touch screens. It has also deployed motion sensing technology with the help of which the display could be changed and dynamic content could be offered to passersby.

Case of Burberry

RFID technology was used by Burberry to trigger catwalk footages in fitting rooms when the customers bring in a certain product. Burberry has hosted an event featuring the events at London Fashion week, all the customers/audience were given an iPad with Burberry's app, which allowed them to access information about products, events, models and various other aspects of London Fashion Week.

Case of Macy

Macy has used Apple's iBeacon technology, it has partnered with ShopKick app, through which notification are sent to customers

when they enter the stores of Macy. It was implemented in NYC and San Francisco. Customers were sent notifications about deals on any products that they previously showed interest in. The brand had planned to target customers at department level like the kid's apparel etc.

Now customer is empowered with loads of information about the products and services they wish to buy or avail on the internet (Accenture, Jonathan Gregory). Thus it has become imperative for physical retailers to create an interconnected environment where the customer can experience both the advantages of online and physical store.

Accenture through its study "State of the Internet of Things" found that close to two-thirds of consumers wish to purchase a connected home device by 2019. The Internet of Things by Accenture plans to exploring ways to enhance the in-store experience of customers. It plans on connecting the physical and digital worlds enabling interaction between them both inside and outside the store.

The paper talks about the location-based beacon technology that can be used by the retailers to interact with its customers when they are in store. It talks about Apple's iBeacon technology and mobile platform which are being used by the departmental stores Lord & Taylor and Hudson's Bay to deliver personalized promotions to customers. Sensors are being used by many stores to track paths through the stores which can help managers improve store layout and merchandise placement. The brand Hugo Boss has started using heat sensors to track the movement of customers to place premium products in areas which are most visited in the store.

RESEARCH METHODOLOGY

The study is intended to investigate the influence of in-store digitization on Indian shoppers. The sample population for this study is people who have visited retail stores. Data have been collected from sample of 117 respondents. Data is gathered through online

questionnaire. A well-structured questionnaire is developed to collect the data. This is a descriptive study using primary data collection through survey. Relevant data for the study was collected using questionnaire that was designed to effectively fulfill the objectives of the research which have been stated above. The Likert scale was used. The following statistical tools are applied to get the reliable inferences, that is, factor analysis, multiple linear regression test and independent sample t-test.

RESULTS & DISCUSSIONS

A. Analysis of Demographic Profile

The demographic profile of respondents with frequency and percentage is listed in table-1. Majority of respondent are aged between 18-25 years which constitutes 40.2% of total respondents. The income of 31.6% of respondents lies between Rs.5 lakhs - Rs.10 lakhs which has the highest number of respondents. 43.6% of respondents are students. The divides based on the gender of respondents are 46.2% male and 53.8% female.

Characteristics	Distribution	Frequency	Percentage
Gender	Male	54	46.2%
	Female	63	53.8%
Age	18-25 years	47	40.2%
	25-35 years	45	38.5%
	35-45 years	12	10.3%
	45 and above	13	11.1%
Annual Income	less than Rs. 5 lakhs	29	24.8%
	Rs. 5 lakhs - Rs. 10 lakhs	37	31.6%
	Rs. 10 lakhs - Rs. 15 lakhs	19	16.2%
	Rs. 15 lakhs and above	32	27.4%
Occupation	Student	51	43.6%
	Business	4	3.4%
	Service	56	47.9%
	Unemployed	6	5.1%

Table - 1: Analysis of Demographic Profile

B. Influence of in-store digitization on store preference of shoppers

The internal consistency of the instrument is tested with reliability analysis. The reliability test is run to find out how sturdily the variables are related to each other (Hair et al. 2003). The reliability estimate of Cronbach's alpha for the variables is 0.716 which is reliable. To reduce and explain the various in-store digitization techniques the

factor analysis was performed. The data validity for factor analysis is tested with the help of Kaiser-Mayer-Olkin (KMO) measures of sampling adequacy and Bartlett's test of Sphericity. The KMO measures of sampling adequacy (0.613) satisfy the conditions of validity of data for factor analysis. The factors and the items constituting them are exhibited in table-2.

Table 2 : Pattern Matrix

		Factor			
		1	2	3	4
Convenience	If you receive a invitation message, promotional offer or coupon from a retail store when you come close to the store.	.644			
	If you are planning on going to picnic and your device recommends the best products for your requirement based on the contextual information about the location you wish to travel to.	.609			
	If you can pick up your online orders in a retail location rather than wait for a delivery.	.567			
	If you can quickly pay for the items you wish to buy by tapping your phone on a reader attached to the cash register.	.511			
	If you could order items while in store by browsing product ranges in “kiosks” available at the retail store.	.476			
Modernization	If devices are made available inside stores in order to capture your interests and then lead you to the right product at the right price.		.836		
	If you are sent wish lists of products you might be interested in via SMS or email when in a retail store.		.573		
	If the application allows you to visualize how a piece of furniture would fit in your house (like your bedroom, living room etc).		.505		
Advanced Technology	If you find the item of your choice ready to try on in a dressing room by merely selecting the right size and colour by scanning a coded tag on an item of clothing with a smart phone.			.737	
	If the devices could suggest recipes that use the condiment by detecting RFID (radio frequency identification) tags on the products inside the carts.			.651	
VirtualReality	If a 3-D body scanner in the retail store can help to ensure the correct fit of apparel for you				.865
	If you can instantly try on different colors or styles of clothing and accessories realistically without physically trying them on.				.650

Extraction Method: Principal Axis Factoring.
 Rotation Method: Promax with Kaiser Normalization.
 a. Rotation converged in 6 iterations.

In order to test the influence of the four factors presented in factor analysis, multiple linear regression analysis has

been performed to analyze the in-store digitization factors influencing the choice of retail store in future. The four underlying

factors as extracted by Factor Analysis are considered as independent variables and 'I would like to buy from stores which use latest and best technology (Technological Advocacy)' is assumed as dependent variable, which is depicted in table -5. Multiple linear regression analysis shows that three independent variables are

positively related with the dependent variable and one is negatively related.

Table-3 reveals the value of R2 and adjusted R2 as 0.205 and 0.177 respectively, which indicates that 20.5% variation in Technological Advocacy is being explained by four underlying factors.

Table - 3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.453 ^a	.205	.177	.77059

a. Predictors: (Constant), Mordernization, Technology, Virtual Reality, Convenience

b. Dependent Variable: Technological Advocacy

Table - 4: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.074	4	4.268	7.180	.000 ^b
	Residual	66.584	112	.595		
	Total	83.658	116			

a. Dependent Variable: Tech Advocacy

b. Predictors: (Constant), VirtualReality, Modernization, AdvancedTechnology, Convenience

Table - 5: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.380	.342		4.036	.000
	Convenience	.214	.103	.194	2.079	.040
	Modernization	.197	.100	.185	1.964	.052
	Advanced Technology	-.096	.072	-.117	-1.330	.186
	Virtual Reality	.207	.059	.305	3.519	.001

a. Dependent Variable: Tech Advocacy

H0: There is no significant difference between male and female with reference to their belief in technological up gradation in retail stores irrespective of its impact on the price of merchandise.

H1: There is significant difference between male and female with reference to their belief in technological up gradation in retail stores irrespective of its impact on the price of merchandise.

Table - 6 Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
I believe in technological up gradation in retail stores irrespective of its impact on the price of merchandise	Male	54	2.8333	.92655	.12609
	Female	63	2.1111	1.01776	.12823

There is difference between the two values of mean as seen in table - 6 and the significance value is more than 0.05 thus there is equality in variances.

Table - 7 Independent Samples Test

		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
I believe in technological up gradation in retail stores irrespective of its impact on the price of merchandise	Equal variances assumed	.192	.662	3.987	115	.000	.72222	.18114	.36341	1.08103
	Equal variances not assumed			4.016	114.565	.000	.72222	.17983	.36599	1.07845

The Sig. (2-tailed) value is less than 0.05, thus the alternate hypothesis is accepted that there is a significant difference between males and females with reference to their belief in technological up gradation in retail stores irrespective of its impact on the price of merchandise.

This hypothesis proves that more men are advocators of technology than women and they believe in technology up gradation.

FINDINGS & CONCLUSION

The findings of the study show the demographic profile of the sample who visited retail stores. In factor analysis, this research identified four key dimensions of various variables of in-store digitization; they are convenience, modernization, advanced technology and virtual reality. In order to assess the impact of different in-store digitization factors on shoppers choice for a

retail store in future, multiple regressions is used. The results clearly revealed that convenience, modernization and virtual reality have significant impact on customers. Also independent sample t-test was done to see if there is any significant difference between how men and women perceive the adoption of in-store digitization techniques with respect to price, it is found that more men are advocators of technology than women and they believe in technology up gradation irrespective of change in prices of merchandise.

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