Nat. Volatiles & Essent. Oils, 2021; 8(4): 14845-14867

NVEO
Natural Volatiles & Essential Oils

Digital Transformation In Retailing: Proximity Marketing - Influences On Customer Engagement

B. Poongodi[1] , J. Clement Sudhahar[2] , Kumar R[3]

[1]Assistant Professor, Center of Marketing, KCT Business School, Coimbatore, India.

[2]Professor in Marketing,Department of Management Studies,Karunya Institute of Technology and Sciences, Coimbatore.

[3]Digital Marketing Analyst, Span Technologies, Coimbatore

ABSTRACT

Digital Innovation has impacted almost all the verticals of business and various sectors. Specifically the consumer goods companies has been in the forefront that has implemented digital innovation in marketing and sales. It's the retail stores that make the business of consumer goods to achieve the high level of exposure. Total consumption expenditure is expected to each nearly US $ 3,600 billion by 2020 from US $ 1824billion in 2017 says industry report. India's retail sector is one of the fastest growing services sector which contributes for 10 percent of India's GDP. Indian retail sector is attempting to adapt itself to the technological advancements in engaging the customers effectively. This study deals with the digital transformation in retail industry which influences the various approaches in engaging customers. The research deals with traditional and contemporary marketing practices in the selected type of retailing stores that include Grocery Stores, Apparels & Fashion and Restaurants and Big-box General Merchandise Stores in one of the major metropolitan cities in India. The study has specifically focused on the influence of proximity marketing, augmented and virtual reality, speed shopping, artificial intelligence and machine learning in customer Engagement in Retail Stores. The study has identified the digital technologies presently being employed by retailers to enhance the customer shopping experiences.The population is the middle, tactical and lower level management people of the Supermarket, Hypermarkets in Apparels & Fashion stores, Grocery stores, and Modern restaurants who have the intention upgrade to a modernized outlet. Sample size of the research is 90 retail outlet stores in Bangalore. The questions were asked to different level management employees of the stores who has some experience in that store. Linear Regression, Multiple Regression, Exploratory Factor Analysis, Correlation were employed to analyse the data. The analysis has revealed that the interface design is one of the important factors in the use of technology in retailing. A well-designed interface should be evaluated in terms of the functional features from the users' perspective. Successful technologies are designed with many human factors in mind. Making Some technological changes in the retail format will improvise the standard and will raise the name of the retail stores.

Keywords: : Proximity Marketing, Digital Interventions, Retail Industry, Contemporary Marketing Practices

RESEARCH APPROACH

Research Type: The study is a descriptive research which employed a structured questionnaire to collect primary data from the retail stores management to describe the characteristics of the retail stores.

Data Collection: Both primary and secondary data was collected for the study. Primary data is collected data from the Store keepers (lower, middle and tactical management) of the retail outlets through direct interview method.

Secondary Data: Secondary data for the study has been compiled from the research articles, retail management books, Internet sources, Magazines and newspapers which have been helpful for the research to identify variables for the descriptive study.

The Universe: The population is the middle, tactical and lower level management employees of the Supermarket, Hypermarkets in Apparels & Fashion stores, Grocery stores, and Modern restaurants who have the intention upgrade to a modernized outlet.

Pilot Study: The researchers devised a questionnaire based on the literature survey. The scales were framed and fine-tuned keeping the objectives of research in mind. The scales developed were checked through a pilot survey before the start of the main survey for its reliability. Cronbach coefficient was employed to ascertain the reliability of the scales used for this descriptive research. The Cronbach alpha value is 0.968 and the results are given below.

Reliability Statistics	
Cronbach's Alpha	N of Items
.968	29

Sampling Methodology: Through direct interview 130 store managers were approached for data collection. A judgement sample of 90 store managers in the city of Bangalore, India have recorded their response through the enumerators. The sampling method used was non-probabilityjudgement sampling method as the research involved selection of store manager based on their intention to modernise their retail stores. The elements in the sample included retail stores dealing with groceries, apparel and fashion accessories and restaurants in Bangalore.

Objectives :

- To study the various traditional and contemporary marketing practices and its impact on the retail store performance
- To assess the influence of proximity marketing, augmented and virtual reality, speed shopping, artificial intelligence and machine learning in customer Engagement in Retail Stores.
- To measure the impact of technological promotion in overcoming the traditional customer engagement practices.
- To examine the factors of customer engagement Business Planning for retailers.

- To identify digital technologies presently employed by retailers to enhance the customer shopping experiences.

Hypothesis Tested:

H_1 : There is a statistically significant relationship between gender of the respondents and their idea of adoption of Proximity marketing, an advanced retail technology to improve their customer engagement

H_2: There is a statistically significant relationship between experience of the respondents in retail sector and their opinion on usage of high technological Devices for marketing like Proximity marketing, IOT, AI etc. to keep their customer informed.

H_3: There is significant relationship between annual turnover of the stores and the preferred mode of marketing strategy being adopted.

H_4: There is correlation between annual turnover of stores and New flash Sale through application, website and loyal card.

H_5: There is correlation between annual turnover of stores and advertisement through digital medium.

H_6: There is correlation between annual turnover of stores and old customer data and posted offers.

H_7: There is correlation between annual turnover of stores and Promote the products through various technological platforms.

Review of Literature:

Dhruv Grewal , Anne L. Roggeveen , Jens Nordfält (2017)in their article focuses on "The Future of Retailing" by highlighting five key areas that are moving the field forward: (1) technology and tools to facilitate decision making, (2) visual display and merchandise offer decisions, (3) consumption and engagement, (4) big data collection and usage, and (5) analytics and profitability. The authors have suggested numerous issues that are deserving of additional inquiry, as well as introduce important areas of emerging applicability: the internet of things, virtual reality, augmented reality, artificial intelligence, robots, drones, and driverless vehicles.

Grame McLean, Alan Wilson (2019) in their article, " Shopping in the digital world: Examining customer engagement through augmented reality mobile applications", furthers the understanding of customer brand engagement through augmented reality (AR) features on retailers' mobile applications. While AR in consumer markets is in its infancy, some innovative retailers have implemented AR technology withing their mobile application. Through a web-based survey of 441 consumers, the research establishes the variables influencing brand engagement through retailers' mobile apps and consequent outcomes AR related brand engagement. The research has introduced a new set of AR attributes, namely AR novelty, AR Interactivity, AR Vividness has established their influence on technology acceptance attributes.

Dhruv Grewal, Anne L.Roggeveen, Rajendra Sisodia, Jens Nordfalt (2017) in their article "Enhancing Customer Engagement Through Consciousness" says that a retailer or service provider with foundations in consciousness has a higher purpose and values that get espoused and fulfilled throughout the organisation, working in a way to optimize benefits to its multiple stakeholders

(investors, employees, customers, suppliers, the environment, the community). Building on these foundations, retailers can achieve deeper engagement with customers, deliver outstanding customer experiences, create emotional connections with customers, and establish a shared identity based on a clear purpose and values.

Bharat P. Rao (2000) in his study on improving retail effectiveness through technology through Physical and online outlet. Where Information technology can be used as an effective tool in managing problems related to the retail supply chain. In this paper, we overview some of the common problems retailers face while evaluating alternative technology solutions. A survey of available analytical tools is presented.**David Prepletaný (2013)**made a deep study about The Impact of Digital Technologies on Innovations in Retail Business Models.In order to meet evolving and shifting customer expectations and demands, retailers need to get to grips with multi-channel shopping behaviour of today's shoppers. Shoppers the world over, armed with smartphones, tablets and virtually "unrestrained" access to the Internet from the comfort of their homes, at work, in stores or on the move, now have the upper hand over retailers and demand shopping experiences anywhere, anytime, and

Kasey Lobaugh , Jeff Simpson, Lokesh Ohri(2015) did a journal article about The New Digital Divide Retailers, shoppers, and the digital influence factor. Today there is a need to measure the success of digital investments against a new set of key performance indicators to encourage retailers to rethink their digital strategies and offerings in the marketplace. The positive impact to store traffic, conversion, order size, and loyalty is clear and retailers have a tremendous opportunity to harness the power of digital.**Adam Silverman(2014) m**ade a Study about The Emergence Of Beacons In Retail.Beacon technology allows for enhanced experiences that are contextual based on location. For retailers, beacons unlock additional customer insight and targeting capabilities that drive both revenue and improved service. However, surrounding the hype is a lack of clarity on consumer benefits, the business case, and the work needed to deploy and maintain a beacon platform in-store. This report aims to provide eBusiness leaders with an understanding of beacon technology and how beacon-based location services within brick-and-mortar stores will transform the customer experience. **NavalkrushnaAllurwar, BalasahedNawale, Swapnesh Patel (**2016) have presented a concept of an extended iBeacon system for proximity target marketing. iBeacon systems can be extended to handle multiple notifications by multiple beacon modules with awareness of some contexts of pedestrains' moving directions, which enables a guide. iBeacon works with Bluetooth low Energy also known as Bluetooth 4.0 or intelligent Bluetooth. The app, Smart devices such as Android phone can detect advertising signals sent the low energy consumption tiny device. Notifications will be pushed automatically to the user when smart device with iBeacon Apps come to certain areas. It provides promising and portfolio usage scenario for business, such as retail stores, to push related information about customers' interested items with the awareness of customers' location.

Dominika Moravcikova and Jana Kliestikova (2017) Made a Journal about **Brand Building with Using Phygital Marketing Communication.** Internationalization and globalization of world markets is causing an increase in rivalry between competing undertakings besides increasing expectations of

end users. The effort of a large number of businesses is to create the competitive potential of a brand. So far from the brand of the 21st century is in a position of competitive advantage, the role of enterprises is search for alternative communication channels to increase interaction from your customers. The article summarizes the theoretical basis of the concept of traditional sales promotion concepts and Phygital as progressive tools of modern marketing communication. The component of this article is also a case study on the use of the concept Phygital and relevant results of the surveys realized by Microsoft Digital Trend in 2015.

Stephanie Claes, **KatelijnQuartier** ,**Jan Vanrie (2017)**did a Research Paper aboutReconsidering education in retail design: Today's challenges and objectives. Technology and digital developments are important drivers for new challenges and opportunities in retail, but also cause change in customers' shopping behaviour. Assuming these changes also affect the discipline of retail design and retail designers, the presented paper explores retail design as it is considered today from the perspective of practitioners and academics in the field. In this context, we propose two emerging challenges in coping with the prevailing developments which influencethe discipline of retail design. We determined a lack of understanding the impact of ongoing phenomena on the retail designer and on their future requirements. Furthermore, we recognized a lack of specialized retail design courses which prepare future designers for this challenging field. The authors conclude with elucidating the context of ongoing research, which aims at overcoming current challenges.

Amrita Pani, **Mahesh Sharma (2012)** made an article on**Emerging Trends in Fashion Marketing: A Case Study of Apparel Retailing in India.** Fashion has touched every sphere of modern consumers globally. Marketers have realized the immense potential to yield business in this booming segment. In present scenario irrespective of the class Indian consumers are adopting fashionable items quickly and conveniently with the rise in competition. The main purpose of the paper is to focus on recent developmental trends in fashion marketing in India for promoting apparel retailing. This paper highlights the strategies implemented by Indian fashion retailers to achieve global competiveness and win customer‟s confidence. The study also evaluates the scopes and challenges of fashion retailing in India. The scope of the study is limited to the area of Apparel retailing. Based on the data collected through secondary sources, this paper makes an assessment of the extent of innovativeness and responsiveness retail sector for marketing fashion. In the concluding section, limitations of the study have been discussed and recommendations provided for undertaking more detailed investigations in the area.

Deepika Jhamb, Ravi Kiran (2011) in their paper onEmerging Trends of Organized Retailing in India: A Shared Vision of Consumers and Retailers Perspective. This present study is an attempt to understand the relationship between the choice of retail formats, based on products attributes, store attributes, consumers' demography and retail marketing strategies. The outcome of the study reveals that consumers' choice for modern retail formats vary as their income level increases. Young consumers' are more inclined to shop from modern retail formats as compared to older ones. Consumers' prefer modern retail formats due to its significant product attributes like improved quality, variety of brands and assortment of merchandise and store attributes like parking facility, trained sales personnel and complete security. The retention strategies, promotional strategies, growth and improvement strategies, pricing strategies and competitive strategies are the major

contributors for the growth of organized retailing and play an important role in enhancing the sales of retail formats. Further, the study helps in designing a framework for choice of modern retail formats from Consumers' and Retailers' Perspective.

Doug Drinkwater(2016) made a white paper brought by intel onFuture of retail Through Internetof things. It may be one of the worst technology buzzwords of all-time, but the Internetof Things (IoT) is on the cusp of changing all business sectors, including the retail industry. The Internet of Things is about to get serious. Forget the hype and those analyst figures, for these technologies are about to make your retail business smarter than you can possibly imagine. IoT is the catch-all term used to describe machine-to-machine (M2M) connectivity, where sensors and hardware devices communicate with each other on their condition and whereabouts. There's nothing overly smart about this of course, but there is when machine-learning and Artificial Intelligence (AI) combine to take this data and turn it into something meaningful for the user, or for the business. The over-used example of IoT has been of your fridge reminding you when you're out of milk, and ordering on your behalf, but IoT goes so much deeper than that. It has a huge impact not only for your business, but also for your industry. It takes us to an age of smart cities, autonomous cars and connected homes. Businesses can leverage the real-time data coming from IoT sensors to know when a product is about to go out-of-stock, or what their customers have bought that day. In addition, they can see when staff are unwell or absent, or when office equipment needs to be repaired or replaced. Going forward, it is argued that soon we, as people, will soon simply be moving, connected "things".

InterSystems IRIS made a White Paper on Digital Transformation in the Retail Industry:Empowering IT to Deliver Strategic Value to BusinessDigital transformation of the retail industry iswell under way.Thanks to digital leaders like Amazon and Apple, retail customers have become more technologically savvy than ever before. Customers expect seamless, personalized, and enjoyable digital experiences spanning all touchpoints along the customer journey — and their expectations are increasing every day. Senior management and the line of business are therefore relying on IT to become strategic partners in identifying and prioritizing innovative new services that can create new sales channels, increase revenue, improve customer retention and loyalty, and provide competitive advantage — and to bring such services to market quickly. In short, the challenges for IT organizations in the retail industry have never been greater. This white paper describes this tectonic industry shift as well as the business drivers, trends, and challenges for IT organizations.

Peter C. Verhoef , Scott A. Neslin , Björn Vroomen(2007) made a research on Multichannel customer management: Understanding the research-shopper phenomenon. This paper developsand estimates a model for understanding the causes of research shopping, and investigates potential strategies for managing it. The research-shopper phenomenon is the tendency of customers to use one channel for search and another for purchase. We hypothesize three fundamental reasons for research shopping: (1) Attribute-based decision-making, (2) Lack of channel lock-in and (3) Crosschannel synergy. Our findings suggest all three mechanisms are at work in making Internet Search⇒Store Purchase the most popular form of research shopping. We illustrate how our methods could be used to simulate and evaluate various strategies for managing research shopping.

Prof. Kalpana Singh (2014)did a Research onRetail Sector in India: Present Scenario, EmergingOpportunities and Challenges. Indian retail sector has therefore attracted the attention of

people fromvarious fields including academia, industry, research organisations. The present study is undertaken to gain an insight about the present structure of Indian Retail Sector, the major sub-sectors in organized and traditional retail and changes in the relative share of various sub-sectors over last few years and penetration of organized retail in various segments. The analysis also covers the opportunities and emerging challenges before Indian retail sector in view of recent policy changes by Government of India.

With India's large 'young' population and high domestic consumption, the macro trends for the sector look favorable. The Indian retail sector is highly fragmented with more than ninety per cent of its business being run by the unorganized retailers like the traditional family run stores and corner stores. During 2005-07 and 2007-10, the share of organized retail increased by 13.9 percent and 21.9 percent respectively. However thereafter organized retail is penetrating the market at a more rapid pace. During the period 2010-12 share of organized retail rose by 60 percent and is expected to increase by 2.6 times during 2012-15. Clothing/Apparel segment is the biggest contributor in organised retailing in India in both the years of study. In 2012 it alone accounted for 33 percent of organized retail followed by Food & Grocery and Mobile and telecom with each having 11 percent share in organized retail. Organized retail had highest penetration in Apparel both in 2007 and 2012. Food and Grocery segment is dominated by traditional retail but in 2012, organized retail penetration in this sector had more than doubled. In view of the recent policy changes, both the existing traditional retailers and modern organised domestic and foreign retailers would have opportunities and face challenges. On one hand, the policy exposes the domestic retailers to competition from foreign retailers; while on the other hand, it seeks to safeguard them through a slew of protective measures. The future prospects of Indian retail market are likely to have some macro-economic impact too. Prospective reduction in supply chain impediments may help in reducing supply side inflationary pressures. Future growth of India's retail sector is also expected to increase employment. The nuances of FDI in retail are still to be worked out.

SM Zulaikha Fatima,CharuBisaria, Ajay Prakash (2017)did a research on Retailing: AnEmerging Trend In India – Literature Review. In this review article, research articles publishedin various peer reviewed journals are read and classified five main areas which are responsible for moving the field forward. The article highlights the key insight from every area and suggests issues which are further needed to be explored. It also introduce emerging areas in retailing. It is expected to motivate retailers and academicians to conduct additional future research in these and other related areas.

Summary of the Reviews : Though there were lot of studies that has gone into technology adoption among the retail business, published articles in specific retail sector on technology adoption practices are considerably low and the researcher took up study in this specific topic. 16 research papers were taken to understand the retail marketing adoption towards technology in 2019. From these articles it proved that the technological adoption in retail outlet will bring some variation towards the business model planning.

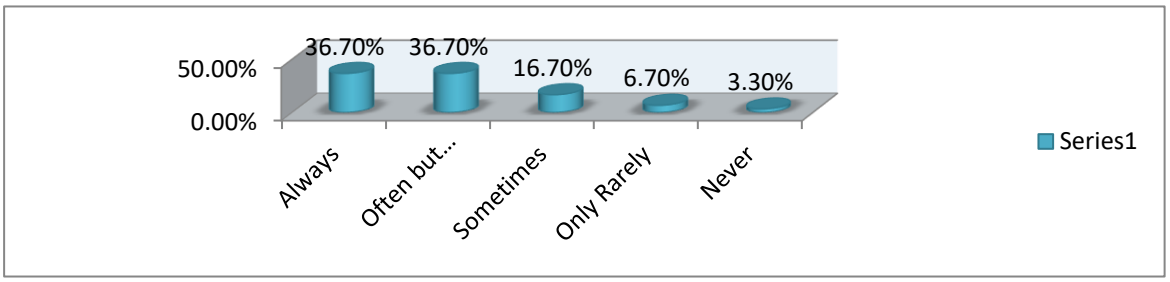
Innovations in Retail Business Models. In order to meet evolving and shifting customer expectations and demands, retailers need to get to grips with multi-channel shopping behaviour of today's shoppers. Shoppers the world over, armed with smartphones, tablets and virtually "unrestrained" access to the Internet from the comfort of their homes, at work, in stores or on

the move, now have the upper hand over retailers and demand shopping experiences anywhere, anytime.

ANALYSIS AND DISCUSSION:

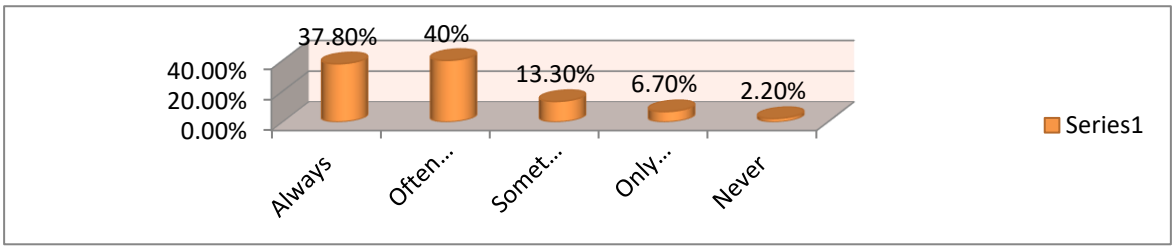
The article discusses and interprets the results of the various modes of Advertisement and its impact applying the Statistical analytical tools and techniques.

CHART 1 :PreferredTraditional Medium of Advertisement



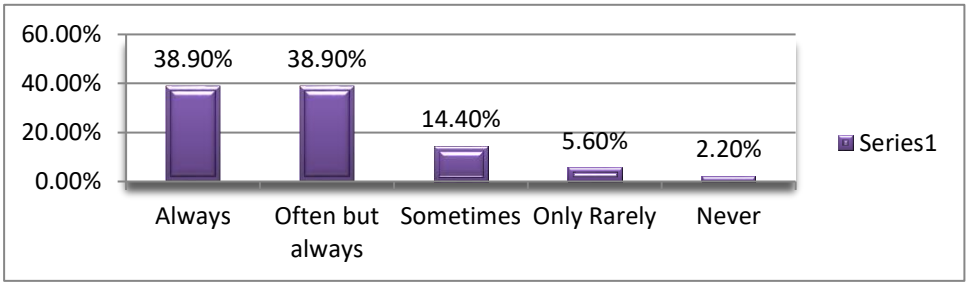
Interpretation: In above chart 1, it is known that the respondents both always and often but always has higher percentage of (37%) uses physical medium (i.e., Pamphlets, Banners, Word of mouth, Newspaper advertisement)advertisements equally than sometimes (17%),only rarely(7%) and never(3%).

CHART 2: ADVERTISEMENT THROUGH OWN MOBILE APPLICATIONS & WEBSITE



Interpretation: In above chart 2, it is known that the respondents often but always(40%) use more advertisements through own mobile applications and website maximum than always(38%), sometimes(13%), only rarely(7%) and never (2%).

CHART 3: MAKE DAILY POST IN SOCIAL MEDIA TO FOLLOW CUSTOMERS

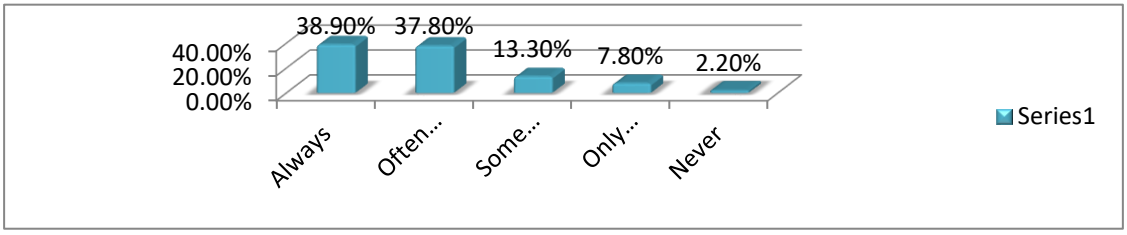


Interpretation: In above chart 3, it is known that the respondents maximum always and often but always make daily post in social media to follow customers equally(39%) than sometimes(14%),Only rarely(6%) and never(2%).

TABLE 4: USAGE OF HIGH TECHNOLOGICAL DEVICES FOR MARKETING

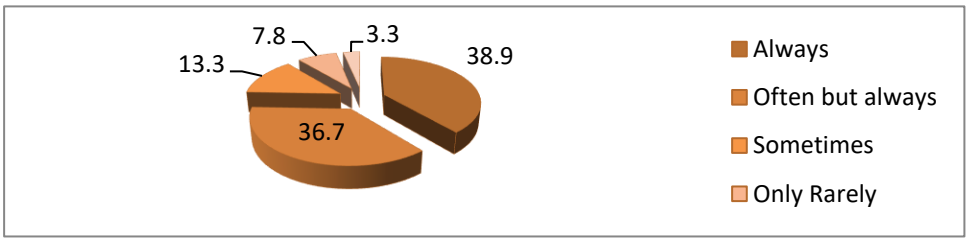
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	35	38.9	38.9	38.9
	Often but always	34	37.8	37.8	76.7
	Sometimes	12	13.3	13.3	90.0
	Only Rarely	7	7.8	7.8	97.8
	Never	2	2.2	2.2	100.0
	Total	90	100.0	100.0	

CHART 4: USAGE OF HIGH TECHNOLOGICAL DEVICES FOR MARKETING



Interpretation: In above chart 4, it is known that the respondents maximum(39%) always use high technological devices for marketing Like Proximity marketing, IOT, AI etc.,than often but always(38%), sometimes(13%), only rarely(8%) and never(2%)

CHART 5: COMMUNICATE DIRECTLY TO CUSTOMERS ON EXPLAINING ABOUT THE OFFERS WHEN THEY COME INSIDE THE STORE



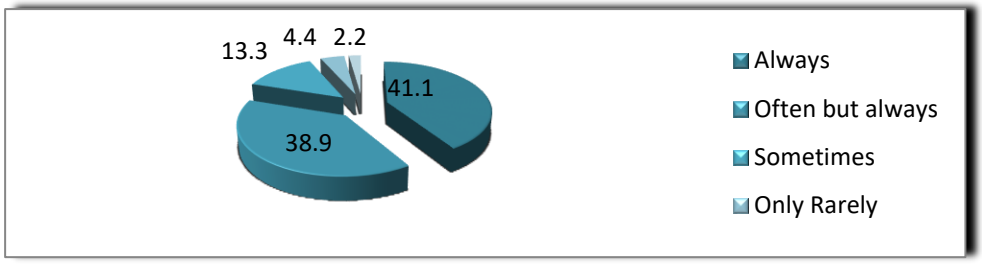
Interpretation:

In above chart 5, it is known that the maximum(39%) respondents always communicate directly to customers on explaining about the offers when they come inside the store than often but always(37%), sometimes(13%),only rarely(8%) and never(3%).

TABLE 6 :USING OWN MOBILE APPLICATIONS FOR POSTING THE OFFERS AND DISCOUNTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	37	41.1	41.1	41.1
	Often but always	35	38.9	38.9	80.0
	Sometimes	12	13.3	13.3	93.3
	Only Rarely	4	4.4	4.4	97.8
	Never	2	2.2	2.2	100.0
	Total	90	100.0	100.0	

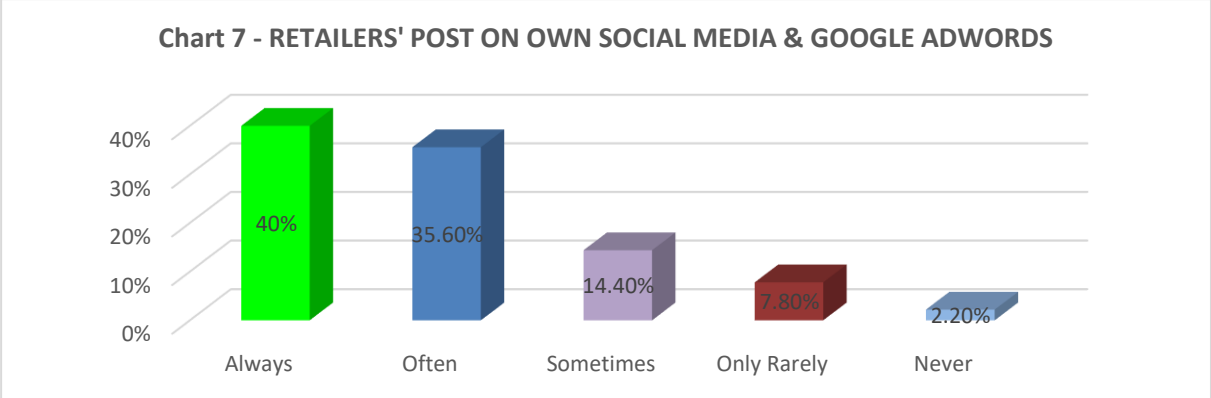
CHART 6: USING OWN MOBILE APPLICATIONS FOR POSTING THE OFFERS AND DISCOUNTS



Interpretation: In above Chart 6, it is known that the maximum respondents (41%) always use own mobile applications for posting the offers and discounts compared to often but always(39%),Sometimes(13%),only rarely(4%) and never(2%).

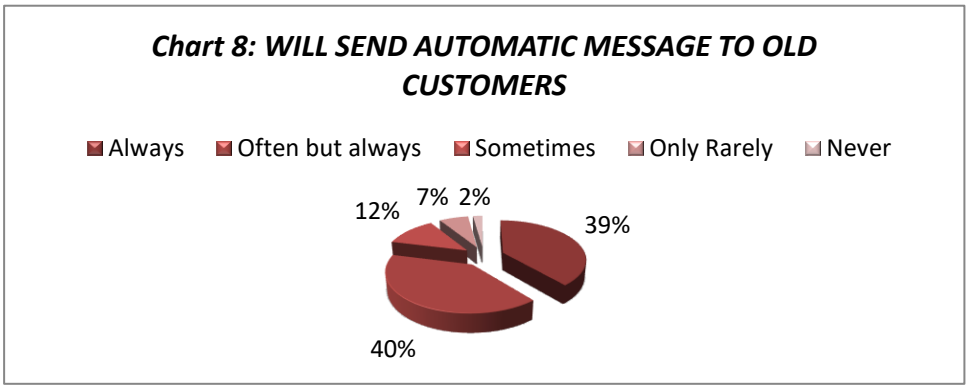
TABLE 7: POST ON OWN SOCIAL MEDIA PAGE AND OTHER KEYS LIKE GOOGLE ADWORDS ETC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	36	40.0	40.0	40.0
	Often but always	32	35.6	35.6	75.6
	Sometimes	13	14.4	14.4	90.0
	Only Rarely	7	7.8	7.8	97.8
	Never	2	2.2	2.2	100.0
	Total	90	100.0	100.0	



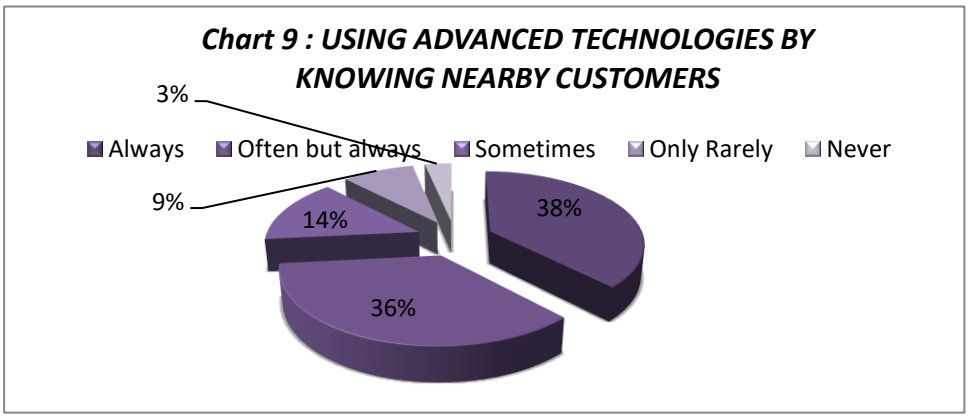
Interpretation: In above chart 7, it is known that the maximum(40%) respondents alwayspost on own Social media Page and other keys like Google Adwords etc. to reveal their daily offers, coupons and plans to their customers than often (36%),sometimes(14%),only rarely(8%) and never(2%).

CHART 8: WILL SEND AUTOMATIC MESSAGE TO OLD CUSTOMERS



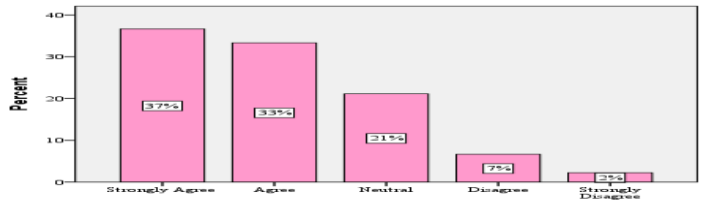
Interpretation: In above Chart 8, it is known that the maximum(40%) respondents often but always send automatic message to old customers to showcase their daily offers, coupons and plans to their customers than always(39%),sometimes(12%),only rarely(7%) and never(2%).

CHART 9: USING ADVANCED TECHNOLOGIES BY KNOWING NEARBY CUSTOMERS



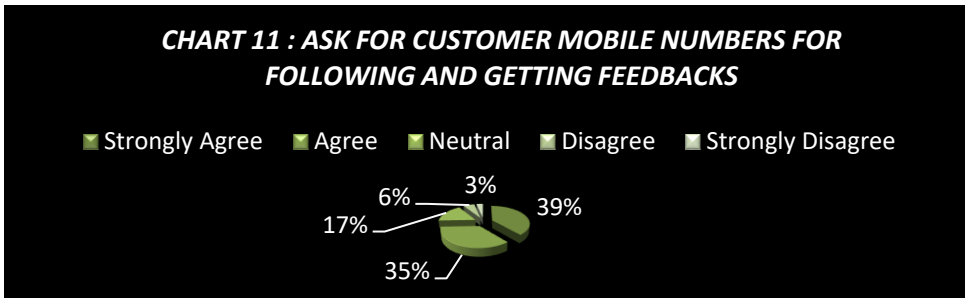
Interpretation: In above Chart 9, it is known that the maximum (38%) respondents always use Advanced technologies by knowing nearby Customers than often but always(36%), sometimes(14%),only rarely(9%) and never(3%).

Chart 10: HAVE SEPARATE FEEDBACK MACINE FOR CUSTOMERS



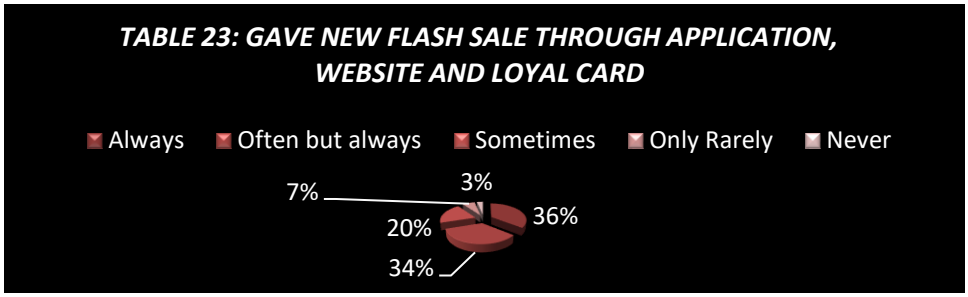
Interpretation: In above Chart 10, it is known that the maximum respondents (33 respondents) strongly agree that they collect and store the data of their customers feedbacks and existing customers by having separate feedback machine than agree(33%), neutral(21%),Disagree(7%) and strongly disagree(2%).

CHART 11: STORES CUSTOMER MOBILE NUMBERS



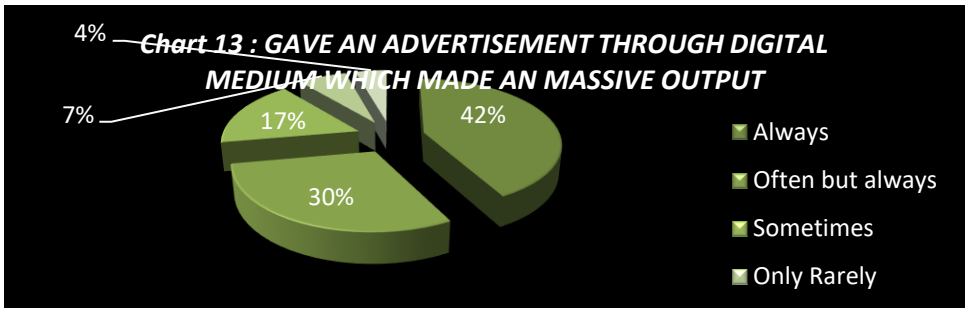
Interpretation: In above Chart 11, it is known that the maximum respondents(39%) respondents strongly agree that they collect and store the data of their customers feedbacks and existing customers by asking for customer mobile numbers for following and getting feedbacks than agree(36%),neutral(17%),Disagree(6%) and strongly disagree(3%).

CHART 12: GAVE NEW FLASH SALE THROUGH APPLICATION, WEBSITE AND LOYAL CARD



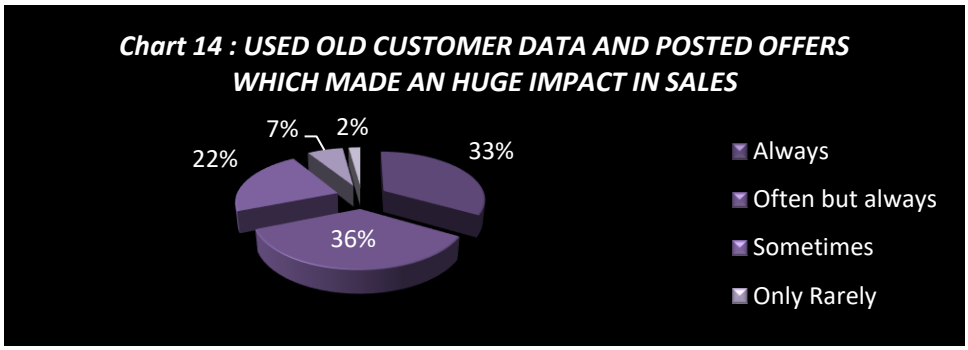
Interpretation: In above chart 12, it is known that the maximum respondents (36%) said their store always give new flash sale through application and thereby their revenue improved and got more walks-ins' to their store which made them to change their business planthan often (34%), sometimes(20%),only rarely(7%) and never(3%).

CHART 13: GAVE AN ADVERTISEMENT THROUGH DIGITAL MEDIUM WHICH MADE AN MASSIVE OUTPUT



Interpretation: In above chart 13, it is known that the maximum respondents(42%) respondents said their store always give an advertisement through digital medium which made an massive output and thereby their revenue improved and got more walks-ins' to their store which made them to change their business plan.

CHART 14 : USED OLD CUSTOMER DATA AND POSTED OFFERS WHICH MADE AN HUGE IMPACT IN SALES

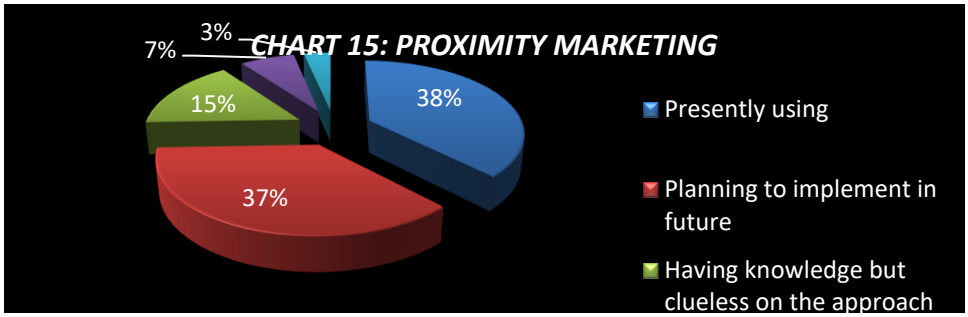


Interpretation: In above chart 14, it is known that the maximum respondents (33%) respondents said their store always used old customer data and posted offers and thereby their revenue improved and got more walks-ins' to their store which made them to change their business planthanalways(33%), sometimes(22%),only rarely(7%) and never(2%).

TABLE 15: PROXIMITY MARKETING

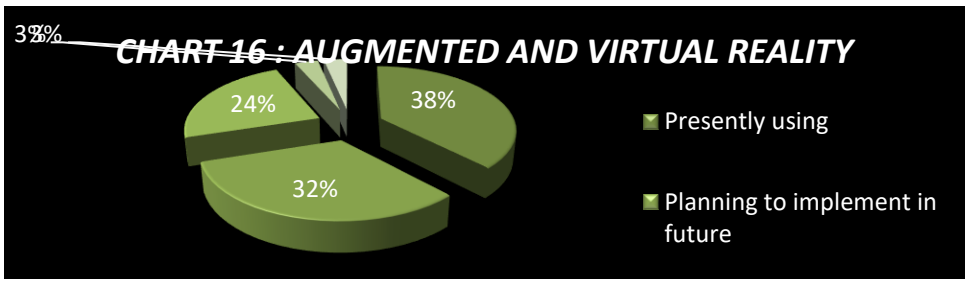
	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Presently using	34	37.8	37.8	37.8
	Planning to implement in future	33	36.7	36.7	74.4
	Having knowledge but clueless on the approach	14	15.6	15.6	90.0
	Not aware	6	6.7	6.7	96.7
	Not interested to know	3	3.3	3.3	100.0
	Total	90	100.0	100.0	

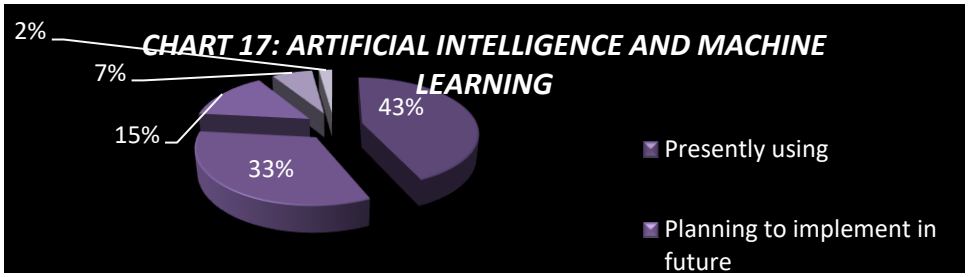


Interpretation: In above Chart 15, it is known that the maximum respondents (38%) respondents said their store is presently using Proximity Marketing as a future advanced retail technology to improve their customer engagement than planning to implement in future(37%), having knowledge but chanceless on the approach(16%), not aware(7%) and not interested to know(3%).

CHART 16: AUGMENTED AND VIRTUAL REALITY



Interpretation: In above chart 16, it is known that the maximum respondents(38%) said their store is presently using Augmented and Virtual Reality as an advanced retail technology to improve their customer engagement than planning to implement in future(32%), having knowledge but chanceless on the approach(23%), not aware(3%) and not interested to know(3%).



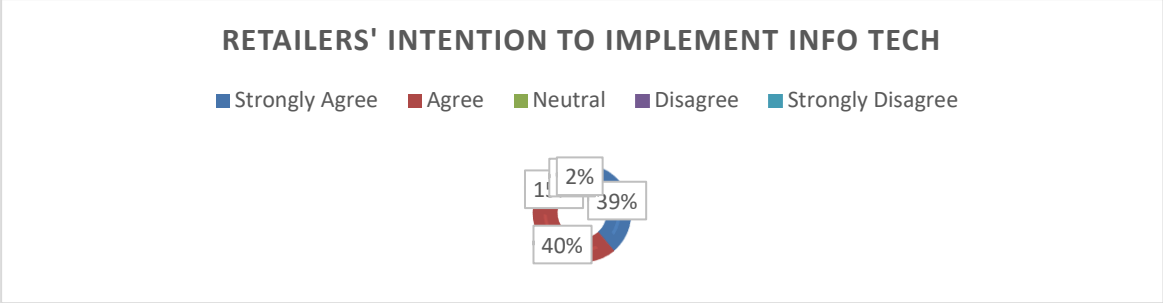
Interpretation: In above chart 17, it is known that the maximum respondents (43%) said their store is presently using Artificial Intelligence and Machine Learning as an advanced retail technology to improve their customer engagement than planning to implement in future(33%), having knowledge but chanceless on the approach(14%), not aware(7%) and not interested to know(2%).

.

Interpretation: In above chart 18, it is known that the maximum respondents (42%) respondents said their store is presently using Speed shopping Store Fully automated without salesmen even for billing like Roadster technology to improve their customer engagement than planning to implement in future (31%), having knowledge but chanceless on the approach(20%), not aware(4%) and not interested to know(2%).

Interpretation: In above Chart 19, it is known that the maximum respondents (40%) said their store is presently using only Websites or Mobile application to improve their customer engagement than planning to implement in future(36%), having knowledge but chanceless on the approach(14%), not aware(7%) and not interested to know(3%).

CHART 20: RETAILERS' INTENTION TO IMPLEMENT INFO. TECH.



Interpretation: In above chart 20, it is known that the maximum respondents (40%) respondents agree that they are planning to implement advanced technologies in upcoming years that present retailers with business opportunities and customers with enhanced shopping experiences in physical stores than strongly agree(39%), neutral(14%), Disagree(4%) and strongly disagree(2%).

4.3 Annual Turnover Groups & Promotion on Tech. Platforms:

Hypothesis set between Annual Turn Over and retailers' opinion on promoting the products through various technological platforms which made an impact on revenue and got more walks-ins' to their store which made to change their business plan

Ho: There is no statistical significance difference in the mean retailers' opinion on promoting the products through various technological platforms among the various ATO groups.

$H_{1:}$ There is statistical significance difference in the mean retailers' opinion on promoting the products through various technological platforms among the various ATO groups.

Table 21.a. - Descriptives

Use high Technological Devices for marketing

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below 25 Lakhs	33	1.09	.522	.091	.91	1.28	1	4
25 to 50 Lakhs	34	2.03	.171	.029	1.97	2.09	2	3
50 Lakhs to 1 Crore	15	**2.53**	.834	.215	2.07	3.00	1	3
More than 1 Crore	8	**4.25**	.463	.164	3.86	4.64	4	5
Total	90	1.97	1.022	.108	1.75	2.18	1	5

Table 21.b - ANOVA

Use high Technological Devices for marketing

	Sum of Squares	df	Mean Square	F	Sig.

Between Groups	71.969	3	23.990	98.566	**.000**
Within Groups	20.931	86	.243		
Total	92.900	89			

Interpretation: Table 21 that the mean retailers' opinion on the use of technology platform to promote their product is significantly different. Retailers with high Annual Turn Over above INR 1 crorehave opined that use of various technological platforms has made an impact on revenue and got more walks-ins' to their store.

Table 22 – Correlations

		Have exclusive feedback machine	Automatic message to old customers	Increased Revenue Generation_NewFlashSale	Using Advanced Technologies by knowing nearby Customers
Have exclusive feedback machine	Pearson Correlation	1	**.885****	**.821****	**.871****
	Sig. (2-tailed)		.000	.000	.000
	N	90	90	90	90
**. Correlation is significant at the 0.01 level (2-tailed).					

Interpretation : There is significant, strong positive correlation between "Exclusive Feedback Machine" and "Automatic Messaging to Old Customers", "IncreasedRevenue_NewFlashSales", "UsingAdvancedTechnologies". Exclusive, separate feedback Machine that helps in collating feedback of customers with their contact number has positive and strong correlation for the use of regular and advance IT technologies in retail, as revealed by Table 22.

IMPACT OF FACTORS ON INSTORE EXPERIENCE:

Table 23 - Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.836[a]	.698	.680	.584
a. **Predictors:**CustEngmt_WebsitesOr Mobile application, CustomerEngmt_SpeedStoppingStore, CustEngmt_Augmented&Virtual Reality, CustEngagemt_Proximity Marketing, Customer Engmt_ AI&Machine learning				
b. **Dependent Variable**: Improves the In-store experience				

The variance explained by the model is 69.8 percent and the difference between the R square and Adjusted R square value is also minimal. Table 24 confirms that the model is fit.

Table 24 - ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.334	5	13.267	38.892	**.000[b]**
	Residual	28.654	84	.341		
	Total	94.989	89			

Table 25 - Coefficients[a]						
Model		Unstandard. Coef.		Stand. Coef.	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.323	.174		1.851	.068
	CustEngagemt_Proximity Marketing	.180	.135	.184	1.336	.185
	CustEngmt_Augmented&Virtual Reality	-.039	.089	-.039	-.442	.660
	CustomerEngmt_AI&Machine learning	-.106	.152	-.105	-.697	.488
	CustomerEngmt_SpeedStoppingStore	-.004	.110	-.004	-.033	.974
	CustEngmt_WebsitesOrMobileApp	**.806**	**.060**	**.826**	**13.507**	**.000**

The predicting factors of Customer Engagement impacting on Instore Experience considered in regression analysis are Proximity Marketing, Augmented_Virtual Reality, AI_MachineLearning and WebsitesOrMobileApp. Mobile Apps has a greater and significant impact on Instore Experience. One unit increase in the MobileApp use is impacting the Instore Experience by 0.8 times. So the regression model,

Instore Experience = 0.806 (CE_Website_MobileApp)

Suggestion:

Improving the use of Mobile App and Websites will enhance the Instore Experience and thus keep the customers more engaged in their purchase process in the retail outlet.

Table 26 - Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.900[a]	0.809	0.805	0.422

a. Predictors: (Constant), Saving Manpower and Salesmen Resource, Improves the In-store experience

There is strong, positive and significant correlation among all the variables chosen for the regression analysis . R value = 0.9. R square value is 0.809 which means 80.9 percent of the variance is explained. The difference between the R square and adjusted R square is negligible.

Table 27 - ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.785	2	32.892	184.576	**.000**[b]
	Residual	15.504	87	0.178		
	Total	81.289	89			
a. Dependent Variable: Intention_Implement Advanced Technologies						
b. Predictors: (Constant), Saving Manpower and Salesmen Resource, Improves the In-store experience						

As p value is less than the alpha value at 5 % significance level, the regression model is fit to predict the value of dependent variable. In this analysis the Intention to Implement advanced technologies is kept as the dependent variable and the variables 'Saving Resources' , ' Improves Instore Experience' are considered as the predictor variables.

Table 28 - Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.223	0.102		2.183	0.032
	Improves the In-store experience & Brand name	0.796	0.053	0.861	15.062	0.000
	Saving Manpower and Salesmen Resource	0.044	0.039	0.065	1.137	0.259
a. Dependent Variable: Intention_Implement Advanced Technologies						

Based on the unstandardized coefficients the following regression model is constructed to predict the intention to implement advanced technologies.

Intention to Implement = 0.223 + 0.796(Improves Instore Experience)

4.7 Dimension Reduction Using Principal Component Analysis:

A factor is an underlying dimension that account for several observed variables. There can be one or more factors, depending upon the nature of the study and the number of variables involved in it. In order to determine major components influencing customer engagement, factor analysis is done. It is also done to check whether the sample data is adequate and to determine the main factors.

Table 28 - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.906
Bartlett's Test of Sphericity	Approx. Chi-Square	1066.834
	df	55
	Sig.	.000

A KMO measure of 0.906 reveals the sample adequacy and there is significant correlation among variables.

Table 29 - Total Variance Explained

Component	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total
1	6.694	60.851	60.851	6.664
2	2.177	19.795	80.646	2.402
Extraction Method: Principal Component Analysis.				
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.				

A two component solution with 80.64 percent of total variance explained is seen in Table 29 using the principal component analysis. Scree plot also confirms the formation of two components.

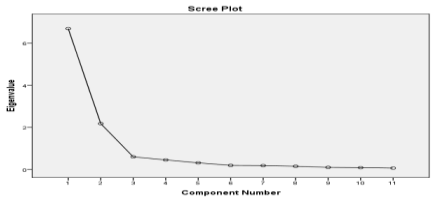


Table 30 - Component Matrix[a]

	Component	
	1	2
Use_High_Technology_Devices	**.940**	-.093
Automatic_Message_old_Customers	**.952**	-.128
Advanced_Technologies	**.891**	-.028
Flashsale_App_website_Loyal_Card	**.910**	-.020
Proximity_Marketing	**.938**	-.078
Augmented_Virtual_Reality	**.790**	-.034

AI_Machine_learning	**.942**	-.096
Speedshopping_store	**.858**	-.101
Reduces_Man_power_sales_men_wages	.068	**.772**
Cannot_generate_ROI	.246	**.875**
Notlikely_Enhance_technology_base_store	.299	**.873**
Extraction Method: Principal Component Analysis.		
a. 2 components extracted.		

Table 30 - Communalities	
	Extraction
Use_High_Technology_Devices	.892
Automatic_Message_old_Customers	.922
Advanced_Technologies	.795
Flashsale_App_website_Loyal_Card	.828
Proximity_Marketing	.887
Augmented_Virtual_Reality	.625
AI_Machine_learning	.896
Speedshopping_store	.746
Reduces_Man_power_sales_men_wages	.601
Cannot_generate_ROI	.827
Notlikely_Enhance_technology_base_store	.852
Extraction Method: Principal Component Analysis.	

Interpretation:

The component Matrix in Table30 reveals the loading of technology variables on Factor 1 and the other conventional variables on Factor 2 . Table 31 shows the how much of the variance is accounted to the extracted component. All the variables show an extraction above 0.6.

FACTORS	
Use_High_Technology_Devices	**INFORMATION TECHNOLOGY IN CUSTOMER ENGAGEMENT**
Automatic_Message_old_Customers	
Advanced_Technologies	
Flashsale_App_website_Loyal_Card	
Proximity_Marketing	
Augmented_Virtual_Reality	
AI_Machine_learning	
Speedshopping_store	
Reduces_Man_power_sales_men_wages	**CONVENTIONAL FACTORS IN CUSTOMER ENGAGEMENT**
Cannot_generate_ROI	

Notlikely_Enhance_technology_base_store	

Value: For a long time retailers where using traditional marketing practices. As time changes people are more conscious about technological changes and they started using it. Therefore, if retail Stores start using Contemporary marketing practices, then it will impact in increasing the performances of the retail stores.**The interface design** is one of the important factors in the use of technology in retailing. A well-designed interface should be evaluated in terms of the functional features from the users' perspective. Brand awareness & Brand Recognition **-** Most of the Branded Stores and retailer have tried something different in introducing new technologies and making easy for both retailers and Customers in dealing with the business, this has impacted to many business

Research Implications: Out of the 60 percentage of store management from the middle management and 26 % from the tactical management, have opined that the stores use 78 % of the advertisements are given through the mobile and web based applications. The findings revealed that the stores used New flash sale through application which has improved their store revenue through increased walk-ins. Around forty percent of the retail stores are presently using Speed shopping Store Fully automated without salesmen even for billing like Roadster technology to improve their customer engagement. Additionally, it's found that at least one third of the retails stores are planning to implement in future. Parameters were described based on the type of stores, location of store and store span.Regression analysis reveals that the In-store experience can be improved through the use of high technological devices like proximity marketing, IoT, AI. In-store Experience is positively and significantly impacted by the use of web and mobile based application in customer engagement.

CONCLUSION: From the whole study the researchers come to this point that Technological innovations helps in effectively engaging the customers and attachment in the comparison of the traditional format charm without of Technologies. All these is possible only because of having bulk of data collected on real time basis to take necessary decisions, which is not possible in traditional format. The most important aspect of IT innovations is that it increases the level of customer engagement because all the time information is available to the customer and even for the retailer also. This aspect help in enhancing consumer delight and helped in reducing time, money and efforts which the customer always want to get their satisfaction. So, information technology innovations give boost up to the retail sale and the future of IT is secure for retail growth.

REFERENCES

i. Roggeveen, A. L., Nordfält, J., & Grewal, D. (2016). Do digital displays enhance sales? Role of retail format and message content. Journal of Retailing, 92(1), 122-131.

ii. Rao, B. P. (2000). Improving retail effectiveness through technology:: a survey of analytical tools for physical and on-line retailers. Technology in Society, 22(1), 111-122.

iii. AmitSaha, 2015, A Study on "The impact of online shopping upon retail trade business", IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. PP 74-78

iv. Rao, B. P. (2000). Improving retail effectiveness through technology:: a survey of analytical tools for physical and on-line retailers. Technology in Society, 22(1), 111-122.

v. Hsiang-Ting Su and Hsin-Pin Fu, 2015, Information Technology Adoption Models in Retailing Industry, International Journal of Management, Economics and Social Sciences 2015, Vol. 4(1), pp.32 – 41.

vi. Jitendra Singh, 2014, A review of impact of information technology in retail sector, ISSN: 2249-7196 IJMRR/ November 2014/ Volume 4/Issue 11/Article No-4/1047-1055, International Journal of Management Research & Review

vii. David Prepletaný, 2013, The Impact of Digital Technologies on Innovations in Retail Business Models, AALBORG UNIVERSITY, International Marketing

viii. Lobaugh, K., Simpson, J., &Ohri, L. (2015). Navigating the new digital divide: Capitalizing on digital influence in retail. Deloitte Digital.

ix. Silverman, A. (2014). The emergence of beacons in retail. Forrester Research, 7.

x. Eleonora Pantano& Loredana Di Pietro (2012), Understanding Consumer's Acceptance of Technology-Based Innovations in Retailing, J. Technol. Manag. Innov. 2012, Volume 7, Issue 4

xi. World Economic Forum "Global Retail Development Index", 2017, International Monetary Fund, World Bank.

xii. Dhruv Grewal, Anne L Roggeveen, Rajendra Sisodia, Jens Nordfalt, 2017, "Enhancing Customer Engagement Through Consciousness", Journal of Retailing, Volume 93, Issue 1, 2017, PP 55 -64, ISSN 0022-4359, https://doi.org/10.1016/j.jretai.2016.12.001.

xiii. Graeme McLean, Alan Wilson, 2019, "Shopping in the digital World : Examining customer Engagement through augmented reality mobile applications", Computers in Human Behaviour, Volume 101, 2019, PP 210-224, ISSN 0747-5632, https://doi.org/10.1016/j.chb.2019.07.002.

xiv. NavalkrushnaAllurwar, BalasahedNawale, Swapnesh Patel, 2016, "Beacon for Proximity Target Marketing", International Journal of Engineering and Computer Science, Volume 5, Issue 5 May 2016, Pp 16359 – 16364, ISSN 2319-7242

xv. Stephaine Claes, Katelijn Quartier, Jan Vanrie, 2016, "Reconsidering education in retail design: Today's challenges and objectives" , Celebration & Contemplation, 10th International Conference on Design and Emotion, 27-30 Sep 2016, Amsterdam, pp 512-516

xvi. Moravcikova, D., &Kliestikova, J. (2017). Brand building with using phygital marketing communication. Journal of Economics, Business and Management, 5(3), 148-153.

xvii. Pani, A., & Sharma, M. (2012). Emerging trends in fashion marketing: a case study of apparel retailing in India. International Journal of Business and Management Tomorrow, 2(10), 1-8.

xviii. Kiran, R., &Jhamb, D. (2011). A strategic framework for consumer preferences towards emerging retail formats. Journal of emerging knowledge on emerging markets, 3(1), 25.

xix. Drinkwater, D. (2016). 10 Real-life Examples of IoT in Insurance. Internet of Business. October, 10.

xx. Xu, J., & Gao, X. (2021). E-Business Enabling Technologies and Building Capacities. In E-Business in the 21st Century: Essential Topics and Studies (pp. 29-61).

xxi. Verhoef, P. C., Neslin, S. A., &Vroomen, B. (2007). Multichannel customer management: Understanding the research-shopper phenomenon. International journal of research in marketing, 24(2), 129-148.

xxii. Singh, K. (2014). Retail sector in India: Present scenario, emerging opportunities and challenges. Journal of Business and Management, 16(4), 72-81.