

Study on the Innovative Technologies in the Marketing Retail Sector

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Abstract— “Retail Technology” refers to solutions that assist retailers to enhance their operations. So, these advanced technologies assist retailers in increasing their sales. Technology is transforming the way we do business. The main aim of the study is Study on The Innovative Technologies in The Marketing Retail Sector. The two primary methods of research, the quantitative and qualitative approaches, are highlighted by the explanation of the many kinds of study. The study's author concluded that, when pitted against the tried-and-true method used before the advent of ICT, the latter was more successful in fostering consumer loyalty and attachment.

Keywords— Retailers, Technologies, Innovative, Consumer, Loyalty

I. INTRODUCTION

“Retail Technology” refers to solutions that assist retailers to enhance their operations. So, these advanced technologies assist retailers in increasing their sales. Technology is transforming the way we do business.

Industries are entirely going to change the way they offer their services. The industries are moving away from archaic techniques and toward modern technology for the majority of their needs. Technology has become an urgent requirement in order to keep up with our fast-paced society. So, there are many industries that have changed a lot because of new technology, like the retail industry. Technological advancements have undoubtedly aided in the resolution of many of the issues associated with running a retail business.

The retail industry has always been one of the most challenging sectors of commerce. Retailers must keep up with changing patterns in customer preferences, new technologies, and innovations, as well as shifting economic landscapes. In this article, we'll discuss how businesses can innovate in retail with the latest technology. We'll also cover some of the most common ways that retailers are using digital technologies to improve their operations and increase revenues.

With total global retail sales projected to reach \$28 trillion by 2020, companies across the board are working hard to capitalize on the growth of retail spending. This also means retail is extremely competitive right now—especially with the rise of direct-to-consumer retailers who further diversify the market.

1.2 Impact of Technology on the Fashion Industry

Technological advancements have made lives convenient for all of us. There are things which we couldn't even think of doing in previous times but in today's era, they are a piece of cake, thanks to the technological transformations. There's hardly any area that has been left untouched by technology. One such area where technology has played its magic is the fashion industry. Fashion has always been about creativity and innovation. India is anticipated to become the sixth-largest fashion market in the world in the coming times. With the changing times, the fashion industry has evolved as well.

A. Impact of Technology on Production:

Technology is significantly being incorporated into the daily processes of the fashion industry which means that production has become much smoother, quicker, and easier. The convenience with which the production is being carried out has resulted in bulk production which not only benefits the brands but is advantageous for consumers as well. Bulk

production results in a reduced cost of production which reduces the manufacturing cost for brands and ultimately leads to a reduction in the market prices which benefits the consumers.

B. Role of Technology in Enhancing the Reach of Brands

Technology has also played a fundamental role in enhancing the reach of brands. With their digital presence through websites and social media, brands are now able to establish themselves on an international level and gain clients from all over the world.

C. Role of Technology in Research and Strategy Development

A lot of software, techniques, and algorithms are available which make the research part for brands easier. These techniques help the brands in understanding consumer preferences and ongoing trends.

D. Impact of Applications Available on the Fashion Industry

The availability of a wider range of apps has made it possible for consumers to try outfits on their avatar, which helps them in understanding what an outfit would look like on them before they decide to purchase it. Fashion design software has helped in the creation of customized products. A lot of brands are offering options to customers through which they can customize their outfits from the comfort of their homes with just a few clicks.

II. LITERATURE REVIEW

B.G.J. ten Bok (2016) The proliferation of online shopping has caused a seismic shift in the retail industry throughout the world. New avenues of communication between stores and their consumers are being developed. It is anticipated that the Internet will become progressively more central to daily life during the next decade. The environment we live in will soon be filled with "smart objects," or physical items that are embedded with electronic circuitry and processing power. The term "Internet of Things" refers to the widespread use of this kind of "smart" component in modern products and services. According to the available literature, stores often play the role of innovators less frequently than those of adaptors. Instead, than concentrating on improving the quality of their services, they are busy developing new items. There hasn't been a lot of research done on the characteristics of service-based innovation. Examining the primary motivators of innovation in the retail business, this article focuses on how the Internet of Things enables retailers to develop their services in new ways. An analysis of the relevant literature and a survey of industry experts led to the conclusion that

IoT has the potential to significantly boost innovation in the service retail sector. It offers several features that simplify, liven up, connect with, and individualize the shopper's time spent shopping. In addition, the IoT outperforms other methods of consumer market analysis and forecasting since it enables businesses to collect data not only on preexisting but also on hitherto unrelated operations. Using this updated information, stores may now micro-segment their clientele based on each customer's specific wants and requirements. In addition, it enables real-time analytics, which adds a new dimension of adaptability and increases the likelihood of successfully meeting the demands of a dynamic consumer market. Consumers' worries about their personal information being compromised are the largest barrier to the IoT's widespread adoption.

Javier Lorente-Martínez et.al (2022) The retail industry is undergoing a tremendous shift, and traditional brick-and-mortar retailers are feeling the effects. Although the adoption of customer-facing in-store technology (CFIST) is an integral part of the retail industry's inevitable change, the benefits of doing so may be unclear to company owners. Using a survey design and a framework influenced by the Theory of the Firm and the Theory of the Advantaged Firm, this research examines the factors that influence such choices among SMEs. The findings underscore the importance of top management in technology choices by showing that attitude toward technology is the biggest predictor of the intention to implement CFIST. This finding has substantial practical ramifications. This study paves the way for further research into the effects and prevalence of CFIST in small and medium-sized enterprises.

Dr. Prodhuturi Venkata Vijay Kumar et.al (2016) The retail industry is under pressure to innovate in order to keep existing customers and attract new ones in light of the fact that consumers are more interested in engaging and interactive retail settings. Tools for enabling the creation of novel systems with the potential to improve this procedure may be found, in particular, via the use of virtual approaches. The focus of this article is on incorporating customer feedback into the retail industry's innovation and technology development processes. Our research shows that these technologies have the potential to be a powerful catalyst for change in the retail sector.

María Fuentes-Blasco et.al (2017) The purpose of this study is to address the paucity of research and lack of agreement around innovation in the service sector, despite the significance of this topic to the success of businesses. Recent years have seen a surge of scholarly and commercial interest in the subject of retailing. The purpose of this paper is to examine the impact of innovation in retail experiences on customer satisfaction and word-of-mouth advertising

from two perspectives: marketing innovation and technology innovation. Strategy/approach/design - The purpose of this study is to examine the three key constructs of store image, consumer value, and store brand equity to determine the direct and indirect impact of marketing and technical innovation on customer happiness and word-of-mouth (WOM). A sample of 820 shoppers from food, clothes, furniture, and electronics stores is analyzed using SEM methods. Outcomes - The findings indicate that technology innovation has a greater impact on image, value, and satisfaction than marketing innovation. Conversely, consumer happiness is a crucial antecedent of WOM behavior, and shop image is the characteristic that most impacts customer satisfaction. Implications for retail managers in practice and directions for further study are discussed. What makes this work valuable is that it delves further into the study of retail innovation in marketing and technology, and how such innovations have direct and indirect impacts on customer happiness and word-of-mouth promotion through store image, consumer value, and brand equity. This is a very young field of research that is now in a disorganized and empirically-weak state.

Asia R. Locket (2018) Retail entrepreneurs that want to reach out to their local communities and their customers may do so via internet marketing. The researchers behind this qualitative multiple case study set out to learn more about how the heads of small retail businesses are putting internet marketing to use to boost sales. Information was gathered from 4 California small company owners in the retail sector who had used internet marketing effectively. This research used Rogers's idea of the spread of innovations as its theoretical foundation. Semi-structured interviews were conducted in person, as well as an examination of publicly available business records, corporate websites, social networking sites, and analytic tools. Social media platforms and techniques, online marketing strategies and problems, online content strategies, and follow-up methods were the four overarching themes that emerged from the data analysis. Business leaders of small retail businesses may choose to align with the tactics suggested in this research in order to grow revenue, stay competitive, overcome problems related with online marketing, and boost communication via the use of new technologies. The potential for small retail company owners to boost income and, in turn, create additional jobs that benefit workers and their families has far-reaching beneficial societal ramifications.

III. METHODOLOGY

3.1 RESEARCH APPROACH

The two primary methods of research, the quantitative and qualitative approaches, are highlighted by the explanation of the many kinds of study. Quantitative data are generated in the former, and then analyzed formally and rigidly using quantitative methods. The inferential, experimental, and simulated research methods are all subsets of this strategy. Building a database from which to infer population features or associations is the goal of the inferential research methodology. To identify the characteristics of a population, researchers often conduct surveys in which a subset of the population is analyzed (via questionnaires or direct observation), and it is assumed that the whole population shares these traits.

3.2 TYPES OF RESEARCH DESIGN

Preparing the research project design, often known as the "research design," is a daunting challenge that follows the job of identifying the study topic. Research design entails making choices on the who, what, where, when, how much, and how to investigate or study. "A research design is the arrangement of conditions for data collection and analysis in a manner that aims to combine relevance to the research purpose with economy in procedure." The study design is the framework for thinking about and carrying out the research itself, and it lays out the specifics of how data will be collected, measured, and analyzed. The design documents the steps the researcher will take to complete the project, beginning with the formulation of the hypothesis and continuing with the elaboration of its operational implications all the way through to the analysis of the resulting data. A well-thought-out plan for doing research is essential because it helps ensure that all of the study's moving parts go smoothly, allowing researchers to glean as much useful data as possible with as little time, money, and effort as feasible.

IV. RESULTS

4.1 RELIABILITY TEST

The researcher has done a reliability test on the 18 statements that were filled out by the 960 respondents from the main cities in Gujarat included in the study to determine the validity and reliability of the data. The Cronbach alpha, a measure of dependability, was calculated by the researcher in order to determine whether the research instrument includes sufficient statements that the 960 respondents may use to produce the intended result of the study.

Table No. 4.1: Case Processing Summary

		N	%
Cases	Valid	480	100.0
	Excluded	0	0
	Total	480	100.0
Cronbach's Alpha		N of Items	
0.896		18	

4.2: CONFIDENCE INTERVAL TEST

This study instrument made use of Likert statements, which rated respondents on how much they agreed or disagreed with each item. The survey was conducted using a 5-point Likert scale to assess the opinions of the target audience. Each sample is tested using a confidence interval for each of the 18 claims. Standard error and confidence interval are calculated as follows:

Step 1: P = the % of respondents who show the agreement level.

Step 2: Q = the % of respondents who show the disagreement level.

Step 3: N = Total Number of Samples surveyed

Step 4: Standard Error = $\sqrt{PQ/N}$

Step 5: At 95% Confidence Limit = $P \pm 1.96 \text{ S.E.}$

Step 6: The result thus obtained will make the researcher knows that at 95%

What is the confidence level of the respondents? How confident are they in the assertions they have made.

Table No. 4.3: Confidence Interval Test Statistics

Statements	Y	N	Total	P	Q	SE	Min Limit (Confidence)	Max Limit (Confidence)
S1	596	188	784	0.76	0.24	0.0138	73%	79%
S2	636	192	828	0.77	0.23	0.0136	74%	79%
S3	580	216	796	0.77	0.23	0.0144	70%	76%
S4	520	244	764	0.68	0.32	0.0150	65%	71%
S5	596	188	784	0.76	0.24	0.0138	73%	79%
S6	636	192	828	0.77	0.23	0.0136	74%	79%
S7	596	188	784	0.76	0.24	0.0138	73%	79%
S8	596	192	788	0.76	0.24	0.0139	73%	78%
S9	596	188	784	0.76	0.24	0.0138	73%	79%

S10	640	184	824	0.78	0.22	0.0134	75%	80%
S11	596	188	784	0.76	0.24	0.0138	73%	79%
S12	628	192	820	0.77	0.23	0.0137	74%	79%
S13	616	180	796	0.77	0.23	0.0135	75%	80%
S14	620	208	828	0.75	0.25	0.0140	72%	78%
S15	596	188	784	0.76	0.24	0.0138	73%	79%
S16	640	184	824	0.78	0.22	0.0134	75%	80%
S17	596	188	784	0.76	0.24	0.0138	73%	79%
S18	628	192	820	0.77	0.23	0.0137	74%	79%

4.3: DEMOGRAPHIC DETAILING

The questions asked to the clients questioned were tailored to their demographics in terms of age, education, profession, and household income. Below is a table displaying the results of the analysis and the conclusions drawn from them:

480 consumers were questioned throughout the main cities of Gujarat state to get insight into their opinions on the technologies used by retail establishments, as shown in table no. 4.4 below. Three hundred and thirty-six were men and one hundred and forty-four were women among the clients.

4.3.1: Gender wise Distribution of Customers

Table No. 4.4: Gender wise Distribution of Customers

Sr. No.	Gender	No. Customers	Percentage
1	Male	336	70.00
2	Female	144	30.00
TOTAL		480	100.00

Source: Primary Data

4.3.2: Age wise Distribution of Customers

In order to determine whether consumers' current ages had any bearing on their familiarity with the technologies used

by the shops in the research, they were polled in a number of cities throughout Gujarat. You may see this evidence in table 4.5.

Table No. 4.5: Age-wise Distribution of Customers

Sr. No.	Age Group	No. of Customers	Percentage
1	Under 18 years	22	4.58
2	18-24 years	80	16.67
3	25-34 years	144	30.00
4	35-44 years	78	16.25
5	45-54 years	68	14.17
6	55-64 years	42	8.75
7	65-74 years	30	6.25
8	More than 75 years	16	3.33
TOTAL		480	100.00

4.3.3: Educational Qualification wise Distribution of Customers

Customers in the cities of Gujarat that were surveyed for the research were questioned about their level of education

to see whether there was any correlation between that and their familiarity with the technologies used by the establishments they frequented. Table 4.5 displays consumer dispersion by level of education.

Table No 4.5: Educational Qualification wise Distribution of Customers

Sr. No.	Education	No. Customers	Percentage
1	Primary School	24	5.00
2	High School	84	17.50
3	Diploma	74	15.42
4	Graduates	152	31.66
5	Post Graduates	146	30.42
TOTAL		480	100.00

4.3.4: Occupation wise Distribution of Customers

Researchers in Gujarat questioned consumers what they did for a living to see whether or not it impacted their level

of interest in learning about the technology employed in the businesses. Consumers are broken down by profession in table 4.6.

Table No. 4.6: Occupation wise Distribution of Customers

Sr. No.	Occupation	No. of Customers	Percentage
1	Student	82	17.0
2	Service Class	230	47.9
3	Business Class	40	8.3
4	Retired	34	7.1
5	Home Maker	95	19.7
TOTAL		480	100.00

4.3.5: Annual Income wise Distribution of Customers

In order to determine whether there is a correlation between the customers' yearly income and their

familiarity with the technology utilized in the shops in the research, surveys were administered to consumers in the various cities of Gujarat state. You can see how clients are split up by their income in table 4.7.

Table No. 4.7: Annual Income wise Distribution of Customers

Sr. No.	Income Level (Rs.)	No. of Customers	Percentage
1	Less than Rs. 30,000	10	2.0
2	30,000 to 59,999	6	1.3
3	60,000 to 99,999	6	1.3
4	1,00,000 to 1,99,999	21	4.6
5	2,00,000 to 2,99,999	194	40.4
6	More than Rs. 3,00,000	242	50.4
TOTAL		480	100.00

V. CONCLUSION

These days, it's harder than ever to succeed in retail. Sales and income generation, not to mention keeping customers happy, become daunting challenges for merchants as

cutthroat competition in the retail business heats up. Therefore, it is crucial for retailers to be aware of the value of ICT and to integrate as many relevant systems as possible into their stores.

Study findings imply the efficiency of retail store technology from the viewpoints of consumers, staff, and managers, thanks to consideration of motivating, efficient, behavioral, and training and development elements.

The study's author concluded that, when pitted against the tried-and-true method used before the advent of ICT, the latter was more successful in fostering consumer loyalty and attachment. None of this would have been feasible in the past without the widespread adoption of ICT, which made it possible to store and access vast amounts of data at any time and analyze that data in order to take appropriate action.

One of the most significant benefits of technological advancements is the rise in customer satisfaction that has resulted from the ubiquitous availability of information, both for the buyer and the merchant. In addition to raising consumer consciousness, this factor facilitates the saving of the time, money, and effort that the customer constantly seeks to get in order to achieve satisfaction. Thus, advancements in IT have been beneficial to retail sales, and this trend is expected to continue. Because of this, the retail sector desperately needs to adapt and effectively apply modern technology.

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