

A Study on Consumer's Intention towards Shopping in Artificial Intelligence Based Retail Stores

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Abstract

AI (Artificial Intelligence) has transformed the world of business. In 2016, technologies like voice-recognition systems, driverless cars and Amazon Go were introduced. But, is the Indian market ready for such exposure to AI technology? This study aims at exploring the consumer's intention towards AI based Retail Stores. It will contribute to current academic literature in the area of Artificial Intelligence and Retailing. There have been several studies conducted in this area but relatively very few have focused on consumers' intention of AI in Retail sector. This study was conducted in the city of Vadodara (Gujarat, India) to ascertain consumer attitude and behavioral intention to use the latest technology. The findings indicate that if issues that the consumers face in Indian retail stores are solved, it is proposed that more people would be encouraged to adapt to such technology. This research also includes review of the literature, data analysis and closes with a detailed bibliography.

KEYWORDS: Technology Acceptance Model, Artificial Intelligence, Retailing

1. INTRODUCTION

1.1 Introduction to Artificial Intelligence

Artificial Intelligence is designing machines that have the capability to think. It is the agility of machines. AI is an automation that appears to compete with the human performance by learning, coming to its own conclusions, understanding complicated content, engaging in dialog with people, increasing human intellectual performance, or replacing humans in executing both periodic and non-periodic tasks.

The person who finally framed the term artificial intelligence and is regarded as the father of AI is **John McCarthy**. In 1956, he organized a conference "*The Dartmouth summer research project on artificial intelligence*" to draw the talent and ability of others interested in machine intelligence for a month of conceiving.

Artificial intelligence, and the related technologies of ordinary language refining and machine learning, provides retailers to reach out to customers at a personal level, retained in deeper communication and boost their experience with the brand. According to an article in Forbes (10th Jan 2017), there are top 10 companies indulging in Artificial Intelligence technology today:

- **Siri:** Apple's personal assistant
- **Alexa:** Amazon's special device to power up the smart home
- **Tesla:** Smart Car (self-driving)
- **Cogito:** Fusion of machine learning and behavioral science to improve customer interaction

- **Boxever:**Machine learning to improve the customer's experience in the travel industry and deliver 'micro-moments,' or experiences that delight the customers along the way.
- **John Paul:** A highly esteemed luxury travel concierge company.
- **Amazon.com:** Acute prediction of consumer online behavior using AI.
- **Netflix:**Highly accurate predictive technology based on customer's reactions to films
- **Pandora:**Musical DNA.
- **Nest:**Learning thermostat that adjusts the temperature at home.

Impact of AI globally

By 2020 Artificial Intelligence (AI) market is expected to be worth USD 16.66 Billion, flourishing at a Compound annual growth rate (CAGR) of 62.9% from 2016 to 2022. The base year used for this study is 2015 and the forecast period is from 2016 to 2022. This provides an intensive analysis of the unreal intelligence market on the bottom of technology, subscription, end-user trade, and geographic.

The extent of our research is also based upon company tiers, designation and region. Therefore, to estimate the size of the AI used in these mentioned factors: -

1. By Company: The type of companies the uses AI technology.

The three tiers have been defined on the basis of their total/ segmental revenue as of 2015:

- Tier 1= > \$1,000 million – 50%
- Tier 2= \$100 million to \$1,000 million- 31%
- Tier 3 = < \$100 million- 17%

2. By Designation: People at different designations that use AI technology.

- 60% of C-Level Executives (**C-level executives** include the highest level executives in senior management for example CEO, COO, CTO, etc)
- 24% of Directors
- 16% of Others (**Others** include Sales Manager, Marketing manager, product manager and industry veterans)

3. By Region: regions where AI technology is used the most.

- 40% of North America
- 25% of Europe
- 20% of Asia-Pacific
- 15% of RoW (Rest of the World)

Target Audience:

- Artificial Intelligence module designers and manufacturers
- Research organizations and consulting companies
- Associations, forums, and alliances related to artificial intelligence
- Investors
- Startup companies
- Raw material suppliers
- Government and other regulatory bodies
- Market research and consulting firms

The data shows the scale of the unreal intelligence market worldwide, from 2016 to 2025. In 2016, the worldwide AI market is calculable to be pricing more or less 644 million U.S. dollars. Some current major uses of computer science market embody image recognition, object identification, detection, and classification, further as machine-driven geology feature detection.

Impact of AI Nationally

AI technology has huge potential to form India's economic and national security future. Recent advances in AI (AI) have stimulated keen interest from each the non-public sector and government.

AI has a huge potential to form India's economic and national security future. However, with the absence of certain policies, it becomes tough to understand the complete power of AI. India should adopt a fixed policy to run AI innovation, adaptation and proliferation in sectors of knowledge technology services.

1.2 Introduction to Retailing

The retail industry is one of the rapidly changing and vital industries in the world and has contributed to the economic growth of many countries. There is French word called retailer which means 'to cut a piece off or to break bulk' from which retail is being derived. In simple words, it signifies a first-hand transaction with the customer.

Retailing is concerned with selling products and services to the consumers for their personal use. Departmental stores like Burdines and Macy's, discounts store like Wal-Mart, and specialty stores like The Gap, Zales Jewelers and Toys 'R' Us, are good examples of the retail stores. Service providers, like dentists, hotels and hair salons, and on-line stores, like Amazon.com, are also retailers.

Evolution of Retailing in India

While barter is taken into account to be the oldest variety of retail trade, retail in India has evolved to support the distinctive desires of our country given its size and quality. Haats, Mandis and Melas have forever been a section of the Indian landscape. They still are gift in most elements of the country and kind a necessary a part of life and change varied areas.

Different types of Retailing

Department stores - These stores sell wide variety of goods that are arranged into the different sections. Some of the departmental stores also include products like shoes, clothing, beauty products, jewelry, housewares, etc.

Example: Big Bazaar, Shoppers Stop, etc

Grocery Stores and Supermarkets - Grocery stores and supermarkets sell all types of food and beverages products and many a times they also sell home products, clothing and consumer electronics as well.

Example: D-Mart, Hyper city, etc.

Warehouse Retailing- Here the products are stored in stock with the enormous variety in large quantities and sold at lower than retail prices.

Example: Big Bazaar

Specialty Retailing - Specialty stores are the stores in a specific category of products. Nike is the example of a specialty retail store.

Example: Medical supplies, home decor, electronics, floor coverings, crafts, toys, or video games. Any of the stores will be specialty stores.

Convenience Retailing - It is the store which keeps the daily usage items like snacks, groceries, confectionery, soft drink, tobacco products, over-the-counter drugs, toiletries, newspapers, and magazines. These types of stores differ from general stores and village shops, as they are not in a rural location. These stores charge comparatively high price than supermarket and grocery stores.

Discount Retailing - These are the stores which sell products at prices lower than the market value.

Mobile Retailing - Here the customer buy products through their smartphones, tablets, or other electronic devices. This is the fastest growing retail business. It makes the customers and suppliers life easier. They can buy and sell product within a click.

Retailing in India

The Indian retail sector is very exploded with quite ninety maximize its business being distributed by ancient family run stores. This provides nice chance for the massive scale retailers to line up their operations. Republic of India is that the third most engaging retail marketplace for international retailers. Indian retail sector accounts for twenty two p.c of the country's Gross Domestic Product (GDP) and contributes to eight p.c of the entire employment.

A store that sells smaller quantities of merchandises or services to the final public. A business that operates as a retail outlet can generally get merchandise directly from makers or wholesale suppliers at a volume discount and can then mark them up in worth available to finish shoppers.

AI in Retail Sector

Artificial Intelligence is changing into additional and additional current in daily life, as we tend to see the technology adopted in everything from digital assistants to autonomous vehicles. One sector that has vast potential for AI is retail. You may not comprehend it, however if you've ever submitted a web question to a merchandiser, then you've in all probability already spoken to associate degree AI. Brands and corporations square measure quickly getting down to realize the advantages of automation, applying AI not solely to covert operations however conjointly to client services. This is often inflicting vast changes to the approach that retail firms work, from business to banking. With AI startups currently providing filmable code, it's easier than ever for businesses to integrate the technical school into their business methods.

How is AI applied inside retail businesses?

For almost any business, AI may be a blessing once it involves economical administration. Supposedly, automatic timesheets, improved money operations and client records that square measure simply and instantly accessible. AI has conjointly been wont to find fraud (which has become a drag as businesses become more and

more digitalized) by tired up anomalies in money records. In short, AI contributes to the final improvement of company organization, particularly within the retail business wherever brands got to wear down a high volume of stock and endless client records. The advantage of AI conjointly shines through once you contemplate the number of data that's bit by bit non-heritable by fully-fledged retail professionals over the course of their careers. Once these fully-fledged professionals retire, the corporate needs to train new staff that can solely reach identical expertise level once a matter of years. By accumulating vital data through AI code, firms offer the simplest client service attainable. AI can even wear down customers on a private level by work specific data from previous interactions that helps the business to know what sure people wish. Handling AI is additionally way faster and additional sententious than muddling through a difficulty with somebody's operative. It's no marvel that some retail firm's square measure planning to reserve human client services as a final resort.

1.3 Technology Acceptance Model

In the Technology Acceptance Model, there are two determinants including perceived ease of use and perceived usefulness. Perceived usefulness is the degree to which an individual believes that using a particular information system or information technology would enhance his or her job or life performance. Perceived ease of use is the degree to which a person believes that using a particular information system or information technology would be free of effort.

Perceived ease of use and perceived usefulness positively affect the attitudes toward an information system; and further, positively affect the individuals' intentions to use and the acceptance of the information system. In addition, perceived ease of use positively affects the perceived usefulness, and both of perceived ease of use and perceived usefulness are influenced by external variable.

While Theory of Reasoned Action and Theory of Planned Behavior have the capability to explore the system usage by incorporating subjective norms and perceived behavioral controls with attitudes toward using technology, Technology Acceptance Model is more appropriate to be applied in online contexts for several advantages. First, Technology Acceptance Model is specific on information system usage for applying the concepts of ease of use and usefulness. Besides, Technology Acceptance Model is more parsimonious. Furthermore, Technology Acceptance Model is more robust in various information system applications.

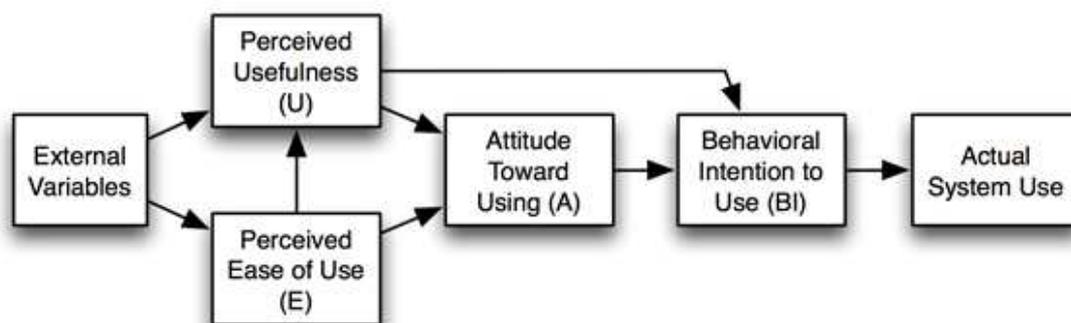


Figure 1: Technology Acceptance Model

2. LITERATURE REVIEW

Our research agenda on Consumer Acceptance on AI based retail stores straddles three existing areas of literature: (1) Artificial Intelligence (2) Retailing (3) Technology Acceptance Model (Consumer's acceptance on new technology)

Table 1: Literature Review

	Title of the Ref Paper/Book	Author	Year of Publication	
1.	Artificial Intelligence- A Modern Approach	Stuart J. Russell and Peter Norvig	1995	Artificial Intelligence
2.	Artificial Intelligence in Business	Tomas Eric Nordlander	2001	
3.	History of Artificial Intelligence	University of Washington - Chris Smith, Brian McGuire, Ting Huang, and Gary Yang.	2006	
4.	Global Economic Impacts Associated with Artificial Intelligence	Nicholas Chen, Lau Christensen, Kevin Gallagher, Rosamond Mate, Greg Rafert	2009	
5.	The Ethics of Artificial Intelligence	Nick Bostrom and Eliezer Yudkowsky	2011	
6.	India and the Artificial Intelligence Revolution	Shashi Shekhar Vempati	August 2016	
7.	The Moderating Role of Customer-Technology Contact on Attitude	Aristeidis Theotokis, Pavlos	2008	

	towards Technology-Based Services	Vlachos, and Katerina Pramataris.		
8.	Past, Present and Future Directions in the Study of the History of Retailing	Andrew Alexander	September 2009	
9.	Customer Experience Management in Retailing: Understanding the Buying Process	Nancy M. Puccinelli, Ronald C. Goodstein, Dhruv Grewal, Robert Price, Priya Raghuram, and David Stewart	2009	
10.	Innovations in Retail Business Models	Alina Sorescu, Ruud T. Frambach, Jagdip Singh, Arvind Rangaswamy, and Cheryl Bridges	2011	
11.	Recent Related Research In Technology Acceptance Model: A Literature Review	Shih-Chih Chen, Shing-Han Li and Chien-Yi Li	2011	Technology Acceptance Model
12.	Exploring students acceptance of e-learning using Technology Acceptance Model in Jordanian universities	Amer Al-Adwan, Ahmad Al-Adwan, and Jo Smedley	2013	

2.1 Literature Review on Artificial Intelligence

(1) “Artificial Intelligence is the study of agents that exist in an environment and perceive and act”

Stuart J. Russell and Peter Norvig wrote a book on Artificial Intelligence namely “*Artificial Intelligence-A modern Approach*” that was published in the year 1995.

According to the authors, humankind has given itself a scientific name i.e. *homo sapiens*-“man the wise”.

In this book, the authors have explained in detail about **Artificial Intelligence or AI** and its approaches. The discovery of this name “Home Sapiens” is because mental capacities of humans are important in everyday lives and to realize sense of self. Thus, the field of Artificial Intelligence or AI is created to understand more about human behavior and their intelligent entities. Besides this reason, predicting the future in detail is next to impossible; therefore, scientists are working to produce human-level intelligence in machines. There have been great innovations and significant discoveries at such early stage that in no time, AI will revolutionize the entire business market as well as create an enormous impact on our everyday lives, thereby changing the course of civilization.

According to authors, AI is a universal field that encompasses huge variety of subfields (from **general tasks** like perception and logical reasoning to **specific tasks** like playing chess, proving mathematical theorems, writing poetry, and diagnosing diseases). In early 1950s, the advent of usable computers turned the learned but armchair speculation concerning the mental faculties into a real experimental and theoretical discipline. It was portrayed “electronic super-brains”, had unlimited potential for intelligence according to many people. However, as well as providing a means for creating artificial intelligent entities, the computer also provides a tool for testing theories of intelligence, and a lot of theories failed to withstand the test.

(2) Another research conducted called “**Artificial Intelligence in Business**” by Tomas Eric Nordlander gives a comprehensive study of AI technology used by businesses.

The term “Artificial Intelligence” has started to attract many people due to its use in fictional books and movies. The latest movie of Steven Spielberg called “A.I- Artificial Intelligence” was released in 2001 and created a blockbuster around the world. The movie was based on futuristic approaches but some information turned out to be incorrect, however, it increased awareness about AI.

The definition of AI is divided into two parts i.e. “artificial” and “intelligence”. The term “Artificial” is something that is made by man and the term “Intelligence” is the intellectual capacity. When they are combined together, AI insinuates that “intellectual capacity of a human into technology”.

Other definition includes: -

“Ability to adapt effectively to the environment, either by making a change in oneself or by changing the environment or finding a new one” (BRITANNICA, 2001).

(3) Lastly, our research is based in India; thus, we chose a research paper that would analyze the scope of AI in the Indian Market. The name of the research paper is, “**India and the Artificial Intelligence Revolution**” by ShashiShekharVempati that was published in August 2016.

According to Shisha, the advancement in AI-based innovation and establishment of AI infrastructure are necessary to prepare India’s jobs and skills markets for an AI-based future and to secure its strategic interests.

AI Development in India faces a few major challenges: -

- AI-based applications have been driven mostly by the private sector and have been focused essentially in consumer goods.

- Early lessons of AI success in the United States, China, South Korea, and elsewhere offer public and private funding models for AI research that India should consider.
- As the nature of jobs transforms rapidly and skills become valuable, the sequential system of education and work needs to be kept updated in today's economic.

Recent advances in computer science (AI) have stirred up fervent interest from each the personal sector and governments across the world, because the risk of factory-made client product machinery with anthropomorphic intelligence inches nearer to reality.

Almost all of these technologies that have begun to implement facets of AI have only been around for a decade or less. Many of these aspects of AI have proven to be hugely helpful in industry, but these are merely applications of the technologies being researched. AI has greatly advanced in the last few years and there have been countless improvements within each subfield.

2.2 Literature Review on Retailing

(4) Retail industry has been a part of our lives since decades. In this research paper, the transformation of retail business has been explained in detail.

“Past, Present and Future Directions in the Study of the History of Retailing”, as the name suggests, is a comprehensive study of retail business by Andrew Alexander.

According to Andrew, retailing being an ancient form of art redefined since the early years of humankind in the form of barter to technologically sophisticated e-tailing done in the 21st century. To define the term “retailing”, the authors have quoted Bennett’s definition in 1995 i.e. “Retailing involves the sale of goods and services to the final consumer”. In Retailing, assortment of goods is planned, purchased and presented by the retailer for the convenience of the consumer.

(5) A research done by students studying at the Wharton School, University of Pennsylvania have done a thorough study on *“Customer Experience Management in Retailing: Understanding the Buying Process”* by Nancy M. Puccinelli, Ronald C. Goodstein, DrubGrewal, Robert Price, PriyaRaghubir, and David Stewart.

According to this research paper, retailers have never understood the importance of understanding consumer behavior. Whereas, consumer research once was a task left to manufacturers of consumer packaged goods, retailers have embraced this responsibility, spending millions of dollars to research, understand, and influence consumer behavior. As we outline, academic research confirms the importance of such practices and we summarize the results of those efforts. Further, this paper develops an ongoing consumer research agenda that provides the author’s views as to the most important consumer issues worthy of retailers’ attention.

As theoretical work in consumer behavior becomes more refined, retailing must keep pace and remain vigilant in the pursuit of deeper customer understanding. Building on the

existing activities of retailers, we seek to provide a theoretical foundation for retailers' consumer research efforts. The overview of the research paper suggests some specific consumer behavior theories that retailers can use to inform and illustrate their customer understanding, ensure greater predictability, and identify sustainable retail advantages.

Specifically, their review of consumer behavior and retailing research suggests the following topic areas offer the greatest breadth of insights into consumer behavior in retail environments: (1) goals, schema, and information processing, (2) memory, (3) involvement, (4) attitudes, (5) effect, (6) atmospherics, and (7) consumer attributions and choices.

2.3 Literature Review on Technology Acceptance Model

(6) *“Exploring students acceptance of e-learning using Technology Acceptance Model in Jordanian universities”* by Amer Al- Adwan, Ahmad Al- Adwan, and Jo Smedley in 2013

These authors believed in the research done by Davis F, Bagozzir R, and Warshaw P (in 1989) about TAM is defined as, *“an adaptation of Theory of Reasoned Action (TRA) specifically tailored for modeling user acceptance of information systems”*. TAM is considered one of the popular models related to technology acceptance and its use. Moreover, it has shown great potential in explaining and predicting user behavior of information technology (Park, 2009).

In this research suggests that, TAM is built on *two fundamental elements - perceived ease of use (PEOU) and perceived usefulness (PU)*. The main mechanisms underlying perceived ease of use are system design and features, whereas the core means underlying perceived usefulness is effort decreasing.

TAM is originally an extension of TRA. Davis first introduced TAM in his Ph.D. thesis in 1986, and three years later Davies (1989) created TAM to explain why users accept or reject information technology by adopting TRA. Fishbone (1967) demonstrated the relationship between intention and behavior by linking the relationship between beliefs, attitudes, intentions and behavior. According to TRA, behavior is driven by the behavioral intention, which is one of the functions of individual attitudes and subjective norms of the behavior in question. Ajzen and Fishbein (1975, 216) state that attitude is *“an individual's positive or negative feelings (evaluative affect) about performing the target behavior”*, and subjective norm is defined as *“the person's perception that most people who are important to him think he should or should not perform the behavior in question”*. In other words, TRA suggests that intention is the main determinant of an individual's behavior, whereas intention to behave is determined by subjective norms and an individual's attitude towards the behavior and their perception of it.

TAM has been applied into many contexts and fields investigating user acceptance of information technology, including the World Wide Web, mobile banking, multimedia and healthcare. However, along with the relationships suggested by TAM, many researchers have also examined the antecedents of both perceived ease of use and perceived usefulness.

3. OBJECTIVES OF STUDY

O1: To determine the customer acceptance of Artificial Intelligence technology in India

O2: To determine the attitude towards AI based stores in India

O3: To determine the intention towards AI based stores in India.

O4: To predict the actual system use of AI based stores in India.

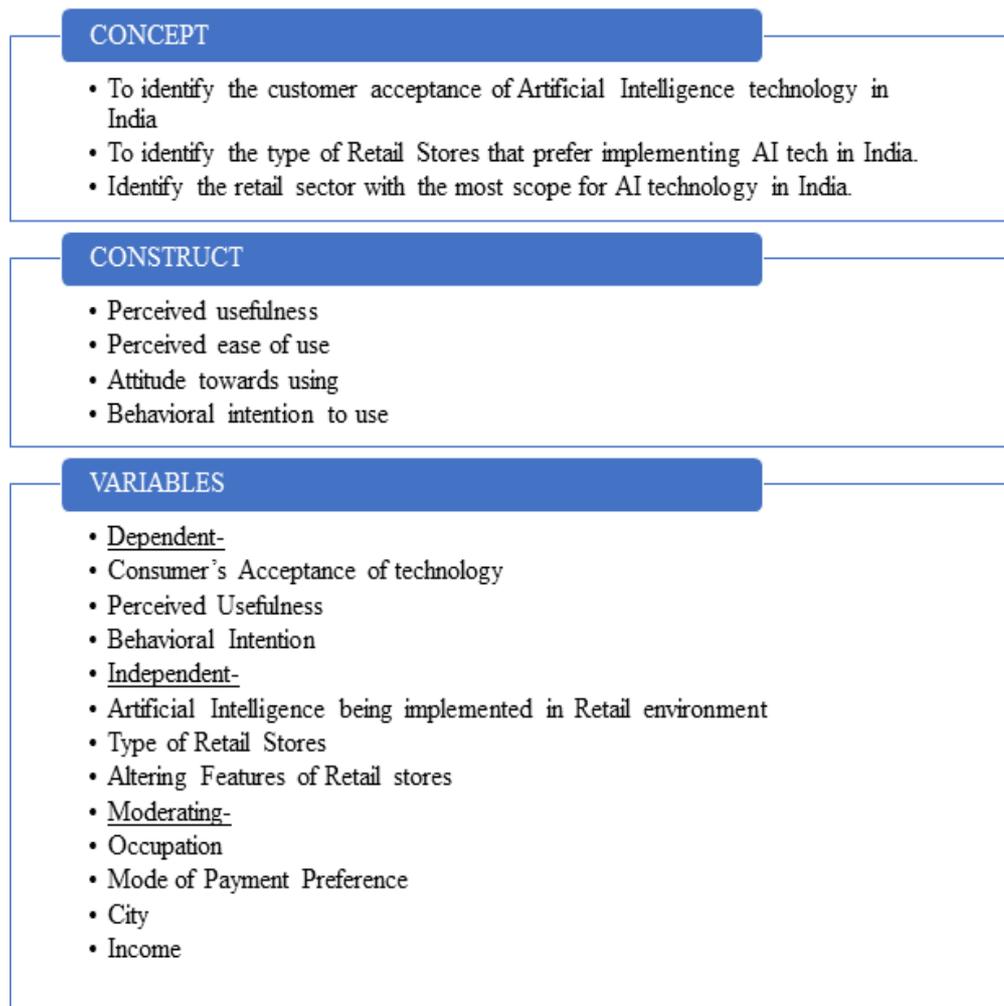


Figure 1: Theoretical Framework

Research Hypotheses and Methodology

Research Hypotheses

H1 - There is a positive relationship between age-based occupation and their attitude towards AI based retail stores.

H2 – There is a positive relationship between class of families and intention to accept AI based retail stores.

4. RESEARCH DESIGN

4.1 Purpose of Study

The study is based on the consumer's acceptance of shopping in Artificial Intelligence based retail stores in India. Also, to find how the consumer will react towards this Artificial Intelligence based retail store. This study will be exploratory and descriptive. Here in this research the consumers

4.2 Study Setting and Extent of Researcher influence

Non - Contrived: This means that there will be no kind of interference. The study is being conducted individually. For example - the feedback about the artificial based retail stores will be given directly there will not be any interference. The decision will be based on their comfort.

4.3 Type of Investigation

There is correlation and cause and effect relationship here. There will be the relation between the consumers and their acceptance towards the Artificial Intelligence based retail stores. The buying behavior of the consumers will affect such types of technology.

4.4 Unit of Analysis

In this research, the experiments will be done with the individuals, dyads, groups, and organizations/stores/malls, which means employees, businessman, businesswoman, etc.

4.5 Time Horizon

The research study is cross sectional because it will be conducted for a short period of time.

5. SAMPLING DESIGN

5.1 Target Audience

Our target audience for this research will be teenagers, adults with different occupation, tech-savvy customers, and elders.

5.2 Sample size

The sample size for this questionnaire will be 201 respondents.

6. DATA COLLECTION

6.1 Methods of data collection

1. Primary data collection:

The primary method we used for this research is Questionnaire.

The aim of this was to know people's opinion about the following:

- Acceptance of AI based retail stores in India .

2. Secondary data collection:

The secondary data collection methods used is as follows:

- Research papers
- Journals
- Website /webpages
- Articles

6.2 Period of data collection

The data was collected at the end of March 2017 .The survey was done through online Google forms and around 50 of them were filled atInorbit Mall Vadodara.

6.3 Irregularities in the field and how they were handled

The major part of the survey was done through online Google forms so the difficulties faced included circulating to the different groups of people through broadcasting on WhatsApp messages, Facebook posts, and going to different households and malls across the city to fill the questionnaire. However, many of them did not respond. Then, we found the solution that was requesting people personally to fill the questionnaire. There was the group of people who were interested in the research and also took initiative to forward the questionnaire. Many people appreciated it but at the same time it was time consuming for other people.

7. DATA ANALYSIS

7.1 Frequency Distribution Analysis:

Table 2 :Gender *How often do you go to retail stores?

		Daily	Twice or thrice weekly	Twice or thrice monthly	Twice or thrice in three months	Total
Gender	Male	20	28	33	28	109
	Female	10	19	47	16	92
Total		30	47	80	44	201

Interpretation: This analysis shows that the majority of the population prefer going to the retail stores twice or thrice in a month. It also depicts that the females go to the retail stores more than Males in a month .Overall, out of 201 sample size, 80 females and males prefer going to retail stores monthly .

Table 3:Age *What mode of Payment do you prefer while shopping online?

		Cash on delivery	Net banking	Credit/Debit card	I don't like Online purchases	Total
Age	18-28 years	59	14	39	4	116
	29-39 years	6	4	29	5	44
	40-50 years	4	4	18	2	28
	51 and above	2	1	4	6	13
Total		71	23	90	17	201

Interpretation: The purpose of this question was to test the preference of aged-based population in online shopping. Our objective was to test how many people have adapted to online shopping. ,Therefore this shows that people are ready to adapt to online shopping. Majority of people between age group of 29-39 years and between 40-50 years prefer paying via Credit / Debit card .Overall, out of 201 samples, 90 people prefer paying via Debit / Credit cards .This proves our 1st Hypothesis .

Table 4 :Current Occupation *Do you think you are ready to accept AI by 2020?

		Yes	No	Maybe	Total
Current Occupation	Student	39	9	24	72
	Business	26	9	5	40
	Job	42	10	11	63
	Home	4	3	5	12
	Retired	3	8	2	13
	Other	0	0	1	1
	Total		114	39	48

Interpretation: The purpose of this question was to find out the acceptance of AI by Occupation .Statistics show that out of 63-sample size in "Job "category, 42 people have given a positive response .Moreover, out of 72 students, 39 have given a positive response by choosing "Yes "or "Maybe". Business related people also seem optimistic as 26 out of 40 i.e .more than half of the sample sizes have given a positive response to accepting AI technology in retail stores .

Table 5 :Income *Do you think you are ready to AI by 2020?

		Yes	No	Maybe	Total
Income	0 - 20,000	17	1	5	23
	21,000 -	15	1	12	28

	40,000				
	41,000 and above	132	5	13	150
Total		164	7	30	201

Interpretation: This table certainly proves our 2nd hypotheses i.e. there is a positive relation between people with more than Rs 41,000 per month income are likely to accept AI based technology in retail. Out of 201-sample size, 150 people have income above Rs 41,000 and 132 are ready to accept AI technology.

Ranking Scale Observation:

The purpose was to find out which retail store people go to more often in order to implement advanced AI technology in the particular sector.

Table 6 :Ranks according to type of retail stores people prefer

Ranks	Food	Softline	Grocery	Hardline	Specialty
1	113	35	26	17	13
2	38	93	46	14	13
3	22	45	95	24	18
4	10	21	26	107	40
5	21	10	11	42	120

A pie chart shows, percentage of people that visit the retail stores.

	Number	Percentage
Food	113	56.22
Softline	93	46.27
Grocery	95	47.26
Hardline	107	53.23
Specialty	120	59.70



Interpretation: The pie chart shows that majority of that respondents have selected similar answers. 23% of the people have chosen Specialty store at option number 5 and about 21% of the people have chosen Food as option 1.

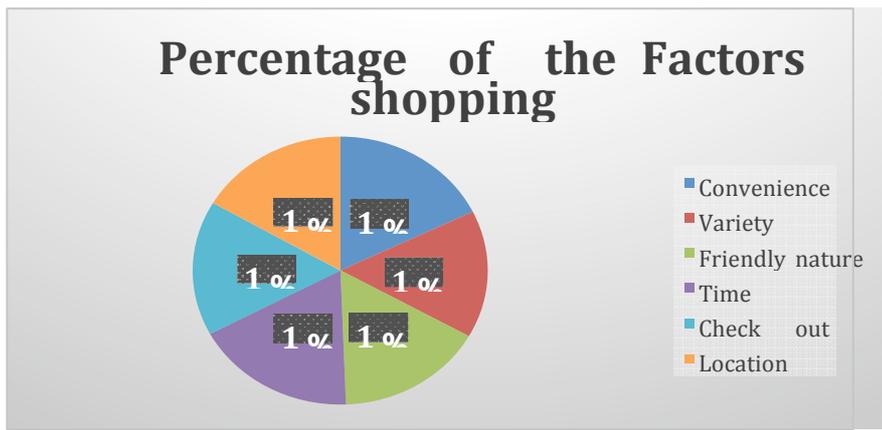
Table 7 :Most important feature in a retail store.

	Convenience	Variety	Friendly nature	Time factor	Check out lines	Location
1	105	34	13	10	21	21
2	33	91	25	16	20	19
3	18	41	96	28	13	8
4	22	8	31	105	12	26
5	15	20	15	26	96	32
6	11	10	24	19	42	98

The purpose was to find out the most important factor for consumers in any retailstore.

A pie chart shows percentage of features in a retail store and which one is most important to them .

	Number	Percentage
Convenience	105	52.24
Variety	91	45.27
Friendly nature	96	47.76
Time factor	105	52.24
Check out lines	96	47.76
Location	98	48.76



Interpretation:The pie chart shows that majority of that respondents have selected similar answers .About 18 %have similar choice in Convenience and Time factor . And about 16 %have similar choice in Check-out lines and Friendliness .

7.2 Mean Analysis:

When you go to a clothing store, do you find it time consuming and boring to try every cloth that you pick?

Sample Size	201
Mean	2.47

Table 8: Frequency Table

	Frequency	Percent	Cumulative Percent
Strongly Agree	69	34.5 %	34.3 %
Agree	33	16.4 %	50.7 %
Neutral	49	24.4 %	75.1 %
Disagree	35	17.4 %	92.5 %
Strongly Disagree	15	7.5 %	100 %
Total	201	100 %	

How inconvenient do you find standing in D-mart)or any grocery / convenience store (check-out lines?

Sample Size	201
Mean	2.28

Table 9: Frequency Table

	Frequency	Percent	Cumulative Percent
Strongly Agree	73	36.3 %	36.3 %
Agree	45	22.4 %	58.7 %
Neutral	49	24.4 %	83.1 %
Disagree	20	10 %	93 %
Strongly Disagree	14	7 %	100 %
Total	201	100 %	

Rate how automation at retail stores will affect your buying experience

Sample Size	201
Mean	2.25

Table 10: Frequency Table

	Frequency	Percent	Cumulative Percent
Very High	66	32.8 %	32.8 %
High	50	24.9 %	57.7 %
Neutral	61	30.3 %	88.1 %
Low	15	7.5 %	95.5 %
Very Low	9	4.5 %	100 %
Total	201	100 %	

7.3 Anova Analysis:**Table 11 :Age is the factor**

Item	F value
When you go to a clothing store, do you find it time consuming and boring to try every cloth that you pick?	.402
How inconvenient do you find standing in D-mart (or any grocery/ convenience store) check-out lines?	.280
Rate how automation at retail stores will affect your buying experience	.987

*Sig .level at 0.05

Table 12 :Current Occupation is the factor

Item	F value
When you go to a clothing store, do you find it time consuming and boring to try every cloth that you pick?	5.627
How inconvenient do you find standing in D-mart (or any grocery/ convenience store) check-out lines?	3.515
Rate how automation at retail stores will affect your buying experience	2.120

*Sig .level at 0.01

Table 13 :Income is the factor

Item	F value
When you go to a clothing store, do you find it time consuming and boring to try every cloth that you pick?	0.536
How inconvenient do you find standing in D-mart (or any grocery/ convenience store) check-out lines?	2.324
Rate how automation at retail stores will affect your buying experience	0.179

*Sig .level at 0.05

8. CONCLUSION AND RECOMMENDATION

From the above Data Analysis, we came to a conclusion that Indian consumer are flexible and enthusiastic to change in technology .Firstly, 184 people out of 201 people prefer online purchases indicating that people have adapted to online shopping technology as it came .Secondly, AI technology is ready to be adapted by people living in Vadodara city in India)as proven by ANOVA test .(Moreover, student, businessmen and employers who are tech-savvy will be the first ones to accept AI technology .Males and Females visit retail stores monthly .Most of them go to Food Stores, Softline stores and Grocery stores respectively .Therefore, AI technology should be implemented keeping in mind the important features like Convenience, Time, Variety, Check-out lines, and Location and how AI can fulfill customer satisfaction in the Retail business.

9. LIMITATION OF THE STUDY

1. The major drawback was the time factor .Our topic of research is so vast that it has a lot of scope to be explored in India .We only had 3 months to do the entire research .
2. We did not have one-to-one conversation with every person who has filled the questionnaire .
3. We could not find tech-savvy people who were our major target .
4. There was a sea of information on AI, retailing and TAM, thus, sorting all the data and organizing it in our Introduction and Literature Review was time consuming .

10. FUTURE SCOPE OF THE STUDY

1. The Sample Size should be the number of respondents should be around 500 or more .
2. The targeted audience should be mainly Tech-savvy people .
3. 100 respondents from each city should be the sample size
4. Interviewing businessmen in the field of IT /retail

5. Targeting equal number of respondents in every area to get accurate results .

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