

Augmented Reality Impact on Retailing in India: An Analysis

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Abstract

Phones now act as artificial eyes and ears, which can store the information of the surrounding environment; hence, the advantage of both digital and real can be blended to open up a wide frontier (Olsson, Lagerstam, Karkkainen, & Kaisa, 2013). The scope & application of these technologies is way beyond anyone's imagination. One such technology is that of Augmented Reality (AR).

Being a market with the highest youth population, India is a country which is extensively using smartphones and consuming data. It has been proven through a survey that the market of Augmented Reality will increase with a CAGR of 55% till 2021 (Mathews, 2012). With the advent of smartphones we have seen a major change in the purchasing pattern of Indian consumers especially the younger age group which has largely switched to online retailing and then back to brick & mortar stores for experiential shopping.

The research study aims to investigate the factors which play a vital role for the effectiveness and successful implementation of AR technology in the field of Retail and thereby influence the buying behavior of a consumer in Delhi and NCR in the age group of 20-35 years. From the review of literature and based on exploratory factor analysis, the independent parameters identified are Awareness, Accessibility & Support Platforms, High Customization of Product, Experiential Shopping and Usability of AR in Retail. It also aims to explore the strength of the relationship between the factors and consumer decision in terms of their buying behavior and customer satisfaction. This information will help Retailers strategize and focus accordingly on the factors of Awareness, Accessibility & Support Platforms, High Customization of Product, Experiential Shopping and Usability while employing Augmented Reality tools and techniques thereby leading to a favorable impact on buying behavior and increase in consumer purchase.

Keywords: Augmented Reality, Awareness, Accessibility & Support Platforms, High Customization of Product, Experiential Shopping, Retail industry, Consumer Buying Behavior

Introduction

With the advent of modern day technologies consumers are changing their ways of interacting in this world. The scope & application of these technologies is way beyond anyone's imagination. There are so many technologies that we once never thought of which have made their way into our day to day lives through various products that consumers use. These technologies have not only changed the way of living of consumers but have also taken the producers' world by storm. It started with the advent of the computer that opened up a whole new frontier. Phones now act as artificial eyes and ears which can store the information of the surrounding environment, hence the advantage of both digital and real can be blended to open up a wide frontier (Olsson, Lagerstam, Karkkainen, & Kaisa, 2013). One such technology is that of Augmented Reality (AR). Many a people, even in today's day and age are still just aware of Augmented Reality on an abstract level. For most people it is still an exotic technology which is often associated with the ones that are found in science fictions.

India being an upcoming market and also from a global prospective the application of Augmented Reality in Retail is slated to be a major game changer. Being a market with the highest youth population, India is a country which is extensively using smartphones and consuming data. It has been proven through a survey that the market of Augmented Reality will increase with a CAGR of 55% till 2021 (Mathews, 2012). There is an estimate that the market of AR related product was supposed to increase to 13.9 Billion dollars which is 130.5% of increase for the previous year's estimate of 6.1 Billion dollar and by 2020 the market will reach upto 143.3 Billion Dollar which will be majorly contributed by the youngster- the tech savvy youth (International Data Corporation, 2017). This segment of population shows a greater inclination towards trendy gadgets like smart wearable devices.

India appears to be a market which is AR ready. With the advent of smartphones we have seen a major change in the purchasing pattern of Indian consumers especially the younger age group which has largely switched to online retailing and then back to brick & mortar stores for experiential shopping. The invention of smart wearable devices, AR glasses which are able to incorporate innovative user interfaces, can connect easily with handheld devices and are able to store energy represent the latest technological development that is happening in this field.

The term augmented reality was coined in the year 1990, and was first used commercially in military and in television. Augmented Reality can be projected or displayed on/by devices such as mobile phones, headgears, screens, glasses, etc. AR involves certain specific technologies like simultaneous localization and mapping, depth tracking, etc. and follows the procedure of collecting data through the devices' camera, processing the data to measure speed, angle, direction, and orientation in space (Pavlik & Bridges, 2013). There are basically four types of Augmented Reality ie marker based augmented reality, marker-less augmented reality, projection based augmented reality and superimposition based augmented reality.

AR technology was first used by US Air Force in their aircrafts, later this technology found its way into other fields like education, commerce, construction, video games, designing, medical, navigation, broadcasting, tourism & sightseeing, music & retail (Carmigniani J. , et al., 2011).

Advertisement

In the advertising sector, augmented reality is used by the marketers to promote their products. They mostly make use of markers that can be accessed by special software or on the company's website to generate an augmented reality effect for the user. Another productive use of augmented reality in the commercial sector is to help make the tedious task of building prototypes easy. Some industries in which this prototype making by augmented reality is used are the automobile industry, architecture, manufacturing and retail. In retail industry, products like shoes are developed by making prototypes with the help of augmented reality to attain the perfect fit for the customers. Retailers like Lowe's, Ikea, Wayfair & others have developed tools that allows their product to be seen in a completely virtual environment, giving them a better idea of how the product will fit into their homes (Cooper, et al., 2004). Another concept developed by ITIA called the magic mirror is being applied in the retail sector in helping customers virtually try and buy clothes in front of a mirror or by using an app in their phones.

Entertainment and education

Entertainment and education sectors benefit from augmented reality technology by making use of educational apps such as sightseeing and places of historical significance, museum guidance, gaming apps etc. AR is also very advantageous in the gaming sector as it helps in giving scores, creating animations and other entertainment features in various games. "Beyond Reality", which was the first to introduce a marker less magazine, presents two board games, PIT Strategy and Augmented Reality Memory. In Augmented Reality Memory, the player turns a card and sees a 3D object, turns a second card and sees another 3D object. If they match, a celebration animation will appear; otherwise, the player can keep looking for matches. (Augmented Reality Games, 2017).

Medical applications

Medical sector is advancing the most in terms of technology, this includes use of robotics in surgery, 3D imaging in diagnosis etc. Therefore, it is not a surprise that augmented reality is one such new technology that is being exploited in the medical sector as well. Augmented reality is used to provide visual cues and medical imaging to surgeons while performing surgery. It is also being proposed for usage in real time medical imaging with the help of data provided. Not only can surgical processes be improved but also diagnostic processes will benefit a lot from advancement in the field of augmented reality.

Mobile phone applications

Apart from all these sectors, augmented reality is used in mobile phone applications to increase the ease of using certain apps such as maps and navigation. Augmented reality is a technology that can be used to project a 3D interface into the physical world and thus has various uses in upcoming mobile handsets. The experience of watching movies and looking at images is increased by projecting it in the physical environment and out of the device. Owing to faster internet services, broadband network and developments in the field of chip engineering by companies like Qualcomm, augmented reality has become inexpensive to incorporate in mobile devices. Traffic updates today are not just on the phone but can rather be projected on a screen

to tell you exactly which road or lane you need to take to reach your destination in the lowest time.

From the research conducted by various companies it has been proven that the market has been hugely affected by these technologies. About 83% of Americans view AR in a positive sense. Over 31% of the respondents were very much familiar that AR that has been brought up by IT companies with the help of which retailers are easily able to implement these technologies in their operation. (DigitalBridge, 2017). About 41% of the customers in UK expect their retailer to launch augmented reality in their operations. 69% of customers of age group 18 – 24 years say that they would be more loyal to a brand which provides them access to better technologies and would like to shop more from the retailer which provides mixed reality or artificial intelligence support in the shopping process (Deloitte Australia, 2016). In 2012 Ikea launched its app with the feature of augmented reality where customers can view how furniture would look in their houses, which made it the most downloaded brand promotional – purpose app. (4imprint Blue Paper, 2012)

As it can be seen, AR is having a huge impact in many sectors and it is vastly affecting consumer preference in various countries especially amongst the youngsters. This paper explores for factors which will play a vital role for the effectiveness and successful implementation of AR technology in the field of Retail.

Literature Review

Augmented Reality enriches the physical environment by adding virtual computer generated digital information in real time (Furth, 2014). This information could be constructive giving more meaning to the environment by overlaying virtual elements on: people, products or surrounding space (Carmigniani J. , et al., 2011) or can be destructive masking various elements of the environment.

Lately Augmented Reality technology has found wide application in retail industry. Some of the major factors which play a vital role for the effectiveness and successful implementation of AR technology in the field of retail are: Awareness, Accessibility & Support Platforms, High Customization of Product, Experiential Shopping and Usability of AR in Retail.

Usability of AR/VR in Retail

AR technology is being used in all the formats of retailing be it online or brick & mortar format. They have been used to enhance consumer shopping experience by making it more engaging (Equity Research, 2016). These technologies offer greater interactivity, information in real time, track ability, and In-store advantage. While digital try-on already existed on the websites, an AR mirror is capable of making things more interactive (Javornik, 2016). These mirrors are being used in make-up salons, museum and dressing rooms of an opera house (Javornik, Rogers, Gander, & Moutinho, 2017).

AR enables greater interactivity. When customers touch or interact with the product for longer period of time they tend to establish an emotional connect with the product. AR helps to prolong this interaction and consumers can correlate himself with the product, increasing the chance of purchase. Another advantage of this technology is that customers can easily access the information in real time and thereby tend to build on their trust of the retailer/service

provider. With the help of AR technologies retailers can create an experiential shopping environment where they can access the information regarding the product at their fingertips. In a survey in USA, 71% of people said that they would shop at the retailer which offers AR. 40% of the people were willing to pay more for a product if they can experience the product through AR platform. 55% of people said that the use of AR makes their shopping more fun. (Interaction Daymon, 2016)

The world has already witnessed how engaging these technologies can be with the advent of games like “Pokemon Go” which is one of the biggest example of an app incorporating augmented reality and was a huge success and gained popularity globally and achieved more than 10 million downloads (Google Play, 2017) (Future Market Insights, 2017). Looking at this, the retailer can go for gamification of the shopping process so as to make shopping trips more engaging for the customers. Companies like Apple, Google, HTC, Asus, Samsung, Lenovo are heavily investing in the AR technology and have launched several devices that support these. Google’s Tango is a technology incorporated in the device’s operating system which makes each and every app’s interface into an AR interactive interface. Many mobile companies are putting in a lot of their investment in R&D to make commercially viable devices which can support this technology. Due to this many researchers assure that Augmented Reality will now be able to become more than an internet fad even in Indian scenario as many Indian retailers are coming up with these technologies incorporated in their stores and website/apps, thus it will be a wise decision to start preparing for an AR future. (Poushneh & Vasquez Parraga, 2017) studied the impact of impact of augmented reality (AR) on retail user experience (UX) and its subsequent influence on user satisfaction and user's willingness to buy.

Awareness, Accessibility & Support Platforms

Deloitte Australia in its report on Augmented Reality stated in a guide for Australian retailers that awareness, accessibility & support platforms are a major enabling force for the implementation of AR technology (Deloitte Australia, 2016). Depending on these factors the market can be analyzed to be favorable for bringing in these technologies to the front end of the retailing process. As the support platform and accessibility to this technology is higher in developed nations like US a report of Cognizant suggested that 67% of retailer are planning to introduce AR based technology in their operation. (Tandulwadikar A, 2016). It is the lack of adequate support platform in developing nation like India, that the growth of the adoption of AR technology is low but in recent few years’ interest towards AR technology amongst people has increased as stated in a report of NASSCOM (Deloitte, 2017).

High Customization of Product

A report published by World Economic Forum in collaboration with Accenture Pvt Ltd states that the impact of modern technology including AR is very high on the extent to which a retailer will be capable of providing customization to its customers and this technology will be the game changer and a must have by 2026 (Accenture, 2017). This technology provides very low cost highly efficient tools for prototyping which will give the consumers on the spot customization option of their product (Stefan Hall, Ryo Takahashi, 2017). Retail Assist Global Retail survey revealed that 77% of consumers expect an offering of products and offers that appeal to their personal taste (Kruh, Coonan, & Devyani, 2017).

Experiential Shopping

The biggest bonus of adopting AR technology for a retailer is to be able to provide experiential shopping environment to its customers. In a report published by National Retail Federation 49% of the respondent visit stores more often for the in store entertainment (National Retail Federation, 2017). Over more than 89% of market leaders expect customer experience to be their primary basis of competitive differentiation (Willy Kruh, 2017). Study by (Watson, Alexander, & Salavati, 2018) states AR application positively influences purchase intention and the same is beneficial for retailers to use.

Though AR technology promises great future they are currently facing few obstacles in their way of becoming completely adoptable. Some of the obstacles faced by AR is cost, adaptability, inadequate support platforms etc. In his research (Scholz, 2016) developed eight actionable suggestions which marketing managers can use to design AR experiences that maximize consumer engagement and result in experience shopping. The cost of implementing this technology in the Indian market it still high which will increase the operating cost of retailers. Additionally, the cost of these gadgets is high for a consumer also. Adaptability: Though the Indian market is having a greater number of smart phone users, still there is a concern about it's adaptability, many people have smartphones that are not capable of supporting AR technology. Inadequate support platforms: There is need of upgradation of IT platform from a global prospective to make these technologies work seamlessly. As the reforms are being carried out, similar markets like China and Gulf countries are revamping their technology to increase their business (Buller, 2017) (Retail Tech Innovation, 2017).

Hence looking at the high adoption in a similar market and influence of AR technology in consumer decision process in the country like USA, UK and Australia, it can be inferred that in near future Indian Retailing will be hugely affected by these technologies and it is the need of the hour to start investing in these technologies to satisfy the ever changing consumer behavior and to compete with the foreign brands which will be bringing their technologies in Indian markets. Thus analyzing these factors in an Indian scenario would help in understanding the perception and the market situation of Indian markets to be AR ready.

Analysis of existing usage of AR

There are major online retailers who are making use of AR very extensively to facilitate better shopping experience for the consumers. Some examples of this would be cosmetics retailer Nykaa using "try on" option on the app, Lenskart uses an "endless isle" concept in their store so that they can make their customers browse through their online stock as well if they do not find it in the available stock in the stores. Lacoste created an app wherein the customers can virtually try on shoes. The app also created AR experiences with window displays, in-store signage, and promotional postcards. (Sheehan A, 2018)

What this has resulted in is that it has increased the customer base as it increased the reach of the retailer and improved the ease of accessing the brands. These usage of AR show that they have focused on the factors that we identified before, i.e., better awareness, good support platforms, high customization, and provided experiential shopping experience.

Based on the extensive literature review conducted, it was found that while Indian retailing in future would largely be impacted by AR technology, it is important to determine the influence of factors such as Awareness, Accessibility & Support Platforms, High Customization of

Product, Experiential Shopping and Usability of AR in Retail on the purchase decision of consumers especially with reference to the younger age group.

HYPOTHESIS

This research aims to study the major factors which play a vital role for the effectiveness and successful implementation of AR technology in the field of retail and thereby influence the buying behavior of a consumer especially the youngsters. From the review of literature the factors identified are Awareness, Accessibility & Support Platforms, High Customization of Product, Experiential Shopping and Usability of AR in Retail.

H0: Factors of Awareness, Accessibility & Support Platforms, High Customization of Product, Experiential Shopping and Usability of AR in Retail does not impact consumer decision in terms of their purchase action and customer satisfaction.

H1: Factors of Awareness, Accessibility & Support Platforms, High Customization of Product, Experiential Shopping and Usability of AR in Retail does not impact consumer decision in terms of their purchase action and customer satisfaction.

The study aims to explore the strength of the relationship between factors of Awareness, Accessibility & Support Platforms, High Customization of Product, Experiential Shopping and Usability of AR in Retail and consumer decision in terms of their purchase action and customer satisfaction with specific reference to youngsters ie consumers in the age group of 20-35 years of age in Dlehi and NCR.

METHODOLOGY

Given the exploratory nature of the research, it was ex-post facto in nature. The design of the approach for investigation included questionnaires filled by prospective consumers and possible secondary sources (statistical handbooks, books, reports, journals, and internet information).

The questionnaire was designed on a five-point Likert scale. Data was collected from 302 prospective consumers from Delhi and NCR in the age group of 20-35 years. The sampling technique used was convenience sampling. That is because consumers exposed to AR technology in Retail industry are highly diversified. The respondents were approached personally for their responses and interviews. The respondents were approached personally for their responses and interviews. The questions on buying behavior items were adapted from the research conducted by (Zhang, Long, Xu, & Tan, 2013).

Based on review of literature it was decided the analytical tools to be used for purpose of analysis of independent and dependent variables currently under study would be exploratory tools such as exploratory factor analysis and explanatory tools such as Confirmatory Factor Analysis and Structural Equation Model. Prior to these tools a pilot study was conducted to test the reliability and validity of the questionnaire followed by Pearson Correlation analysis. Post the successful completion of the Pilot study expert opinion was sought on questions designed.

Reliability and Correlation

The reliability of Cronbach Alpha for questions with reference to Awareness, accessibility and affordability, Customization, Experiential shopping and Usability and Buying Behavior was 0.775, 0.772, 0.859, 0.812 and 0.847 respectively which indicates strong internal consistency amongst the questions asked.

The Pearson Correlation showed that the independent parameters of Awareness, accessibility and Affordability; Customization; Experiential shopping; Usability had a moderate to strong correlation with the Dependent Variable of Buying Behavior of consumers.

Table 1: Reliability & Correlation Test Results

	Awareness, Accessibility & Affordability	Customization	Experiential Shopping	Usability	Buying Behavior
Awareness, Accessibility & Affordability	1				
Customization	0.467	1			
Experiential Shopping	0.595	0.697	1		
Usability	0.613	0.648	0.786	1	
Buying Behavior	0.523	0.638	0.658	0.741	1

Regression

Regression analysis helps understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed. The value of R^2 (Coefficient of Determination) was 0.597 and Adjusted R^2 was 0.587. This shows that as far as Augmented Reality is concerned 59.7% of the variation in the consumer's Buying Behavior can be explained by factors such as Awareness, Accessibility and Affordability; Customization; Experiential shopping; Usability. Thus, it was seen that the alternate hypothesis holds good

Table 2: Regression Analysis Results

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.238	0.733	1.689	0.093
Awareness, Accessibility & Affordability	0.034	0.031	1.111	0.267
Customization	0.232	0.068	3.392	0.001
Experiential Shopping	0.024	0.039	0.622	0.534
Usability	0.241	0.042	5.675	0.000

On analysis, the equation derived from regression analysis for Buying Behavior of consumers in age group of 20-35 years with reference to Augmented Reality was as follows:

$$\text{Buying Behavior} = 0.232 \text{ Customization} + 0.242 \text{ Usability}$$

This means that the Buying behavior of consumers in cases of Augmented Reality technology used by Retailers is expected to increase by 0.232 due to the possibility of customization of the product and by 0.242 due to the usability of the AR technology.

A multicollinearity check for the model was done. It was seen that since VIF value for all independent variables was less than 5 thus establishing that the model has no multicollinearity.

Table 3: VIF Values

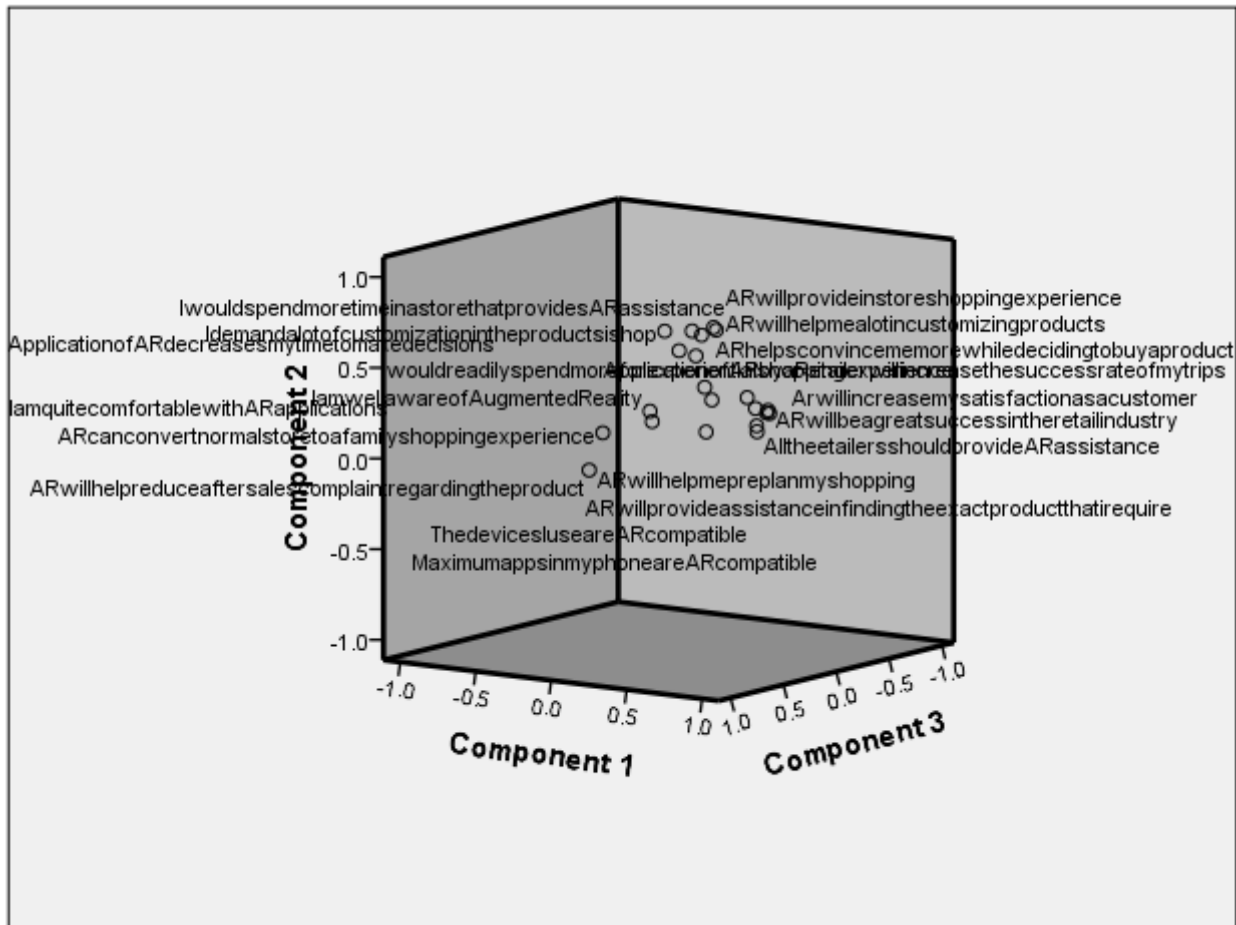
	VIF
Awareness, Accessibility & Affordability	0.908
Customization	1.322
Experiential Shopping	1.741
Usability	1.822

Factor Analysis

Exploratory Factor analysis is a statistical method used to identify the underlying relationships and key factors out of a set of measured variables. It helps in identification of the latent constructs and their key factors. Confirmatory factor analysis is used to test whether the measures of a construct or the independent variables considered in the hypothetical model are similar to the researcher's understanding of the construct.

Exploratory factor analysis was conducted by principal axis factoring which helped to identify the key factors which impact consumer buying behavior in case of Influencer marketing. The value of KMO was 0.937 which indicates that the correlation between the pairs of variables can be explained and factor analysis as a data reduction technique is appropriate. Bartlett's test of sphericity is used to test the null hypothesis that there is no significant difference between the observed co-relation matrix and identity matrix. The results showed that four factors were able to explain 63.03% of variance. The constructs or factors identified can be labeled as Awareness, Accessibility and Affordability; Customization; Experiential shopping; Usability. The Factor analysis thus helped in grouping together of the manifest variables into a couple of factors for each construct Awareness, Accessibility and Affordability; Customization; Experiential shopping; Usability. This will be of help to the Senior Management as it would bring about clarity of factors that the Senior Management needs to focus on while strategizing for Augmented Reality especially for products for consumes in the age group of 20-35 years of age.

Component Plot in Rotated Space



Confirmatory Factor Analysis

The confirmatory factor analysis (CFA) was done using Amos 18.0. The CFA helped to identify the manifest variable which in the minds of the consumers is of utmost importance. The CFA with all the manifest variables and latent variables taken into consideration produced a GFI of 0.912. The result for the model was Chi-Square / Degrees of Freedom (X^2/df), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), and Root Mean Square Error of Approximation (RMSEA) was 1.743, 0.912, 0.881, 0.05.

From the CFA or the measurement model, it was seen that measured variables must be duly considered by the senior management of retail store operations for strategizing and attempting to positively influence the buying behavior of consumers. The following are the important manifest variables:

Table 4: Standardized Regression Weights

Manifest Variable	Factor Loading
AA1 I am well aware of Augmented Reality (AR)	.708
AA4 More than 50% of apps in my phone have AR interaction option like Snapchat, Google Box, Facebook Face Filters etc.	.658
AA3 The devices I use are AR compatible	.477
AA2 I am quite comfortable with AR applications	.911
C1 I demand a lot of customizations in the products I shop	.695
C2 Application of AR decreases my time to make decision while shopping	.712
C3 AR will help me a lot in customizing products	.795
E1 I would spend more time in a store that provides AR assistance	.707
E2 AR will provide in store experiential shopping experience	.716
E3 Experiential shopping helps me take better decisions	.772
E4 I would regularly shop from a retailer that provides experiential shopping	.736
E5 AR will reduce after sales complaint regarding the product.	.546
E6 I would readily spend more for experiential shopping experience	.749
E7 AR is / can convert a normal store to a family shopping center	.593
U3 AR will provide assistance in finding the exact match of the product I require.	.790
U6 AR will be a great success in the retail industry	.774
U5 AR will help me pre-plan my shopping	.727
U4 All the e-retailers should provide AR assistance	.722
BB1 Application of AR by a retailer will increase the success rate of my trips made to a retailer	.813
BB2 AR will increase my satisfaction as a customer	.813
BB3 AR helps convince me more while deciding to buy a product	.796

Structural Equation Model

The result for the model was Chi-Square / Degrees of Freedom (X^2/df), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), and Root Mean Square Error of Approximation (RMSEA) was 1.743, 0.912, 0.881, 0.05

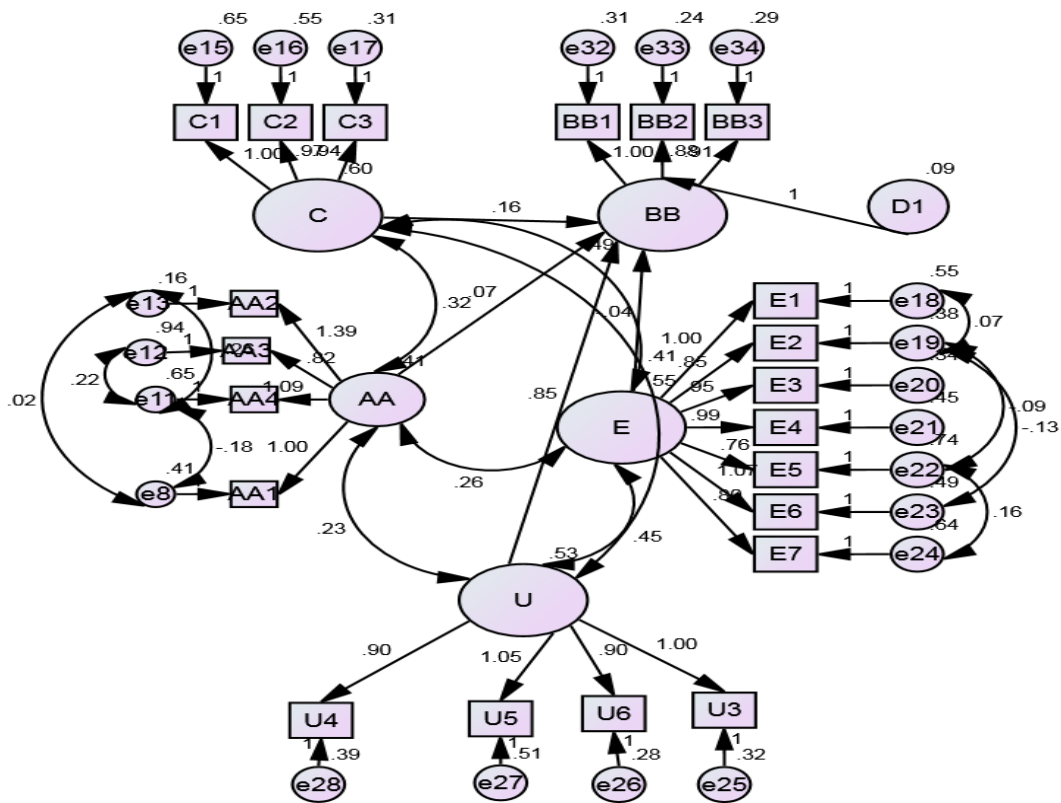


Figure 1: SEM Figure

Thus, from the structural model, the probability (p) value and standardized regression weight or beta value connecting the latent variables was arrived at, helping in accepting or rejecting of the developed Hypothesis.

Table 5: SEM Results

	P value (0.001 level)	Standardized Regression Weight (β)
BB<--- AA	0.306	0.059
BB<--- C	0.218	0.162
BB<--- U	***	0.794
BB<--- E	0.822	-0.35

Thus, when Usability goes up by 1 standard deviation, positive influence on the buying behavior of the consumer is to an extent of 0.794 standard deviations.

Conclusion and Managerial Implications

Being a market with the highest youth population, India is a country which is extensively using smartphones and consuming data. With India being an upcoming market the application of Augmented Reality in Retail is slated to be a major game changer. It has been proven through a survey that the market of Augmented Reality will increase with a CAGR of 55% till 2021 (Mathews, 2012).

Based on the analysis of the sample of 302 consumers in Delhi and NCR in the age group of 20-35 years, it was seen that Awareness, Accessibility and Affordability; Customization; Experiential shopping; Usability had a moderate to strong correlation with the Buying Behavior of consumers. On conducting the regression analysis on the data it was seen that as far as Augmented Reality is concerned 59.7% of the variation in the consumer's Buying Behavior can be explained by factors such as Awareness, Accessibility and Affordability; Customization; Experiential shopping; Usability. The regression analysis also determined that buying behavior of consumers in cases of Augmented Reality technology used by Retailers is expected to increase by 0.232 due to the possibility of customization of the product and by 0.242 due to the usability of AR technology.

This corroborates the fact that AR technology is being used to enhance consumer shopping experience by making it more engaging in all the formats of retailing be it online or brick & mortar format and is getting the desired results of positively influencing buying behavior of consumers. These technologies offer greater interactivity, information in real time, track ability, and In-store advantage. Also, the results are in line with the survey findings of Retail Assist Global Retail which revealed that 77% of consumers expect an offering of products and offers that appeal to their personal taste and are customized. (Kruh, Coonan, & Devyani, 2017). Thus for Retailers in order to positively impact consumer buying behavior amongst youngsters it is important that AR technology is used to be able to customize the products as per the tastes and likings of the consumer and also increase the usability in terms of interactivity, information in real time, track ability, and In-store advantage.

Exploratory Factor analysis helped in grouping together of the manifest variables into a couple of factors for each construct Awareness, Accessibility and Affordability; Customization; Experiential shopping; Usability. This will be of help to the Senior Management as it would bring about clarity of factors that the Senior Management needs to focus on while strategizing for Augmented Reality especially for products for consumers in the age group of 20-35 years of age.

The CFA helped to identify the manifest variable which in the minds of the consumers is of utmost importance. Factors such as awareness and high comfort level with AR applications, using AR technology helps in customizing products and decreases the time to make decision while shopping, provides in store experiential shopping experience and thereby helps the consumer make a more qualified decision, provide assistance in finding the exact match of the product required, helps pre-plan shopping positively impact the buying behaviour of consumers and has further led to consumers in Delhi and NCR stating that they would regularly shop from a retailer that provides experiential shopping and all e-retailers should provide AR assistance. The CFA showed that application of AR by a retailer increases the success rate of trips made by consumers to a retailer, serves to increase the satisfaction as a customer and helps convince

the consumer more while deciding to buy a product. These factors should be dominant in the minds of the Senior Management of the Retail industry so that they are able to enhance the shopping experience of the consumers. The established structural model shows that based on data collected from consumers: when Usability goes up by 1 standard deviation, positive influence on the buying behavior of the consumer is to an extent of 0.794 standard deviations. This corroborates the findings of (Poushneh & Vasquez Parraga, 2017) who studied the impact of impact of augmented reality (AR) on retail user experience (UX) and its subsequent influence on user satisfaction and user's willingness to buy. This is also in line with many researchers who assure that Augmented Reality will now be able to become more than an internet fad even in Indian scenario as many Indian retailers are coming up with these technologies incorporated in their stores and website/apps, thus it will be a wise decision to start preparing for an AR future.

Thus, from a retailer's perspective it would be worthwhile to look at the eight actionable suggestions by (Scholz, 2016) which marketing managers can use to design AR experiences that maximize consumer engagement and result in experience shopping. The findings of the paper can also be backed by the literature review which states that there has been a positive influence on the customer behavior due to the implementation of AR technology by the retailer in developed countries like USA, UK and Australia. Hence it can be said that the implementation of AR technology in India where the majority of the population is young and penetration of new technology is huge, it is the need of the hour to start investing in AR technologies to positively influence and satisfy the ever changing consumer buying behavior and to compete with the foreign brands which will be bringing their technologies in Indian markets.

Limitations

The research was primarily conducted in Delhi and NCR which is a limitation. Subsequent research for the rest of India can be done to ascertain if similar factors affect customer satisfaction and influence consumer buying behavior across the country. Also, research on the influence of Virtual Reality technology in the Retail industry can also be studied.

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