The Role of Artificial Intelligence in E-Retailing: A Case of Indian Fashion E-Retailing

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***Abstract*—Artificial Intelligence (AI) is one of the familiar and blooming term in 21st century, AR has various fascinating features which are adopted by various industries in the world to improve customer services and add value to their business. Technology is life blood for AI so this study also includes Technology Acceptance Model (TAM). This model helps us to understand the efficiency and clarity of websites and Apps for the customers. It is important to know how artificial intelligence has been advantageous for customers as well as for E-retailers. E-retailers are using AI in their business and creating positive impact in the minds of customers. Argument Reality (AR) is one the acknowledged term of AI in E-retailing. By using AR in online shopping its helping E-retailers to add a greater number of customers to their business. Also, customers find it more interesting and efficient in spending time in online shopping. It helps customers to give positive impact on purchase decision also provides extreme satisfaction and trust the particular E-retiling app or website. So, it's essential to know the importance of AI in E-retailing referred to Indian Customers has been studied and analysed using SPSS and AMOS. Finally, this study will help the E-retailers to make strategies and improve AR effectively in their business.**

***Index Terms*—Argument Reality, Fashion E-retailing, Purchase Decision, E-Trust, E-satisfaction.**

I. INTRODUCTION

Over the years Augmented Reality has become more and more popular as an emerging technology in online shopping. Augmented reality (AR) is the process of integrating digital information created by computers with real-world objects so that user can view the physical actual world. The AR feature is viewed with digital information. The idea behind augmented reality (AR) has changed so much over the years that it can now be seen as a key component in desktop-based interaction and toward global computing, allowing smart services to be accessed "anytime at anywhere." AI is emerging field of enhancing the real world with digital objects and data has the potential to completely transform the field of shopping. (Karippur, K. N., et, al., 2016)

AR has been used in many industries like gaming, health, education, transportation, sports and still they are experimenting new ways of involving AR in business and stand out in the market, which helps them to earn more profits and statin in the market for the long time. AR has huge potential in E-retailing with respective to Fashion Industry in India as it's an young county in the world, with huge population of Generation Y customers.

In fashion industry virtual dressing room, 3D try on, makes a purchaser comfort and gives a great experience of wide range of technology in their private place. World's largest furniture retailers has launched AR in mobile for better shopping experience for their customers. It will not only help the customers to shop but also how well it suits the lamp or table in their home. Likewise, Lenskart has come up with 3D try on technology where customer can scan his/her face and try glasses in their homes, which will save time and customer can try wide variety range of glasses. These kinds of technologies will help the E-retailers to attract more customers for their business (Karippur Nanda Kumar et., al.,2016)

II. REVIEW OF LITERATURE

E-Retailing

E-retailing is nothing but selling of services and goods online. Basically E-Retailing is categorised into two

types “Pure Plays, Bricks and Clicks” Pure Plays means using internet as entire retailing, whereas Bricks and clicks means having both physical store and online business (Prachi Jain, 2024). With growing use of computers and technologies has boosted business efficiently. E-commerce has become buzz world of computers in current decade. Internet applications, electronic mail, the World Wide Web, and electronic data interchange information can be shared between people, business, and nations through computers related to business and e-commerce. (Jain. P. 2024) Vaitheeswaran is the father of E-commerce in Inia. He found Fabmart.com which was India’s first e-commerce website founded in 1999.

Argument Reality

AR is a technology that allows users to superimpose virtual 3D objects into physical world through mobile or any other electronic technology device. (Baisakhi Mitra Mustaphi 2020) E-commerce is an essential tool to offer various products and services to customers. Products will be at your doorsteps when customer order it online, also e-retailers are constantly in touch with customers and fulfil their desires (Channa 2012)

Perceived usefulness

Perceived Usefulness means consumers using a specified online shopping platform or system enhances their shopping experience and meets their needs more efficiently. One of the key factors that enhances PU in online shopping is the convenience it offers. Online shopping platforms allow consumers to shop from home, and access a variety of products. Studies have found that consumers perceive online shopping as useful because it saves time and effort compared to traditional way of shopping (Kim et., al., 2009). The perception of usefulness directly influences online shopping behaviour, including purchase intention, satisfaction, and loyalty. Consumers who perceive an online platform as useful are more likely to use it regularly and recommend it to others. PU affects initial and repeated purchase intentions. Consumers are likely to revisit and make purchase on a platform that they believes and enjoyable to use (Koufair 2002)

Perceived Ease of Use

PEU helps in determining whether consumers will adopt, continue to use, and be satisfied with an online shopping platform. Consumers are more likely to return to an e-commerce site and make purchase if they perceive it as easy to use. (Venkatesh 2008) A positive perception of ease of use increases the likelihood that consumers will adopt an online shopping platform suggests that when consumer notices an online platform as easy to navigate, they are more likely to develop positive attitudes towards it, increasing their intentions to use the platform in the future. PEU influences not only the initial adoption of a platform but also consumer satisfaction and loyalty. When consumers find a platform easy to use the are more likely to be satisfied with their experience, which leads to higher levels of customer loyalty and increased repurchase intentions (Szymanski 2001). Platforms that offer these functionalities are generally perceived as easier to use and more convenient, which can increase apoptin. (Cyr et., al., 2007) suggest that features that minimize the number of steps required to complete a purchase process contribute to a higher PEOU

Purchase Decision

Purchase Decision is the final step consumer makes in purchase process, influenced by several factors, these factors interrelated and impact on consumer behaviour, “Purchase Decision are the decision and a decision process where consumers really decides to buy one of the products among various alternative choices” purchase decision includes (P. R. Kotler 2017) product choice where consumers will make a decision to buy a product for money, choosing a brand is completely customers choice, factors like price, comfort, quality and others will influence while making purchase decision. (P. Kotler 2012)

Trust

Trust indicates the individual’s willingness to depend on the behaviours of the partners in a relationship.(Ha., et., al., 2016) Trust has two distinctive form, cognition based and affect based(Morrow et., al., 2004) Understanding these two from shopping perspective cognitive trust reflects consumers’ confidence that e-retailers are honest and accurate and keeps up the promises made by them,(Dabholkar, et., al., 2009) it is based on consumer rational expectations where as positive affect reflecting the emotional attachment between buyers and providers also builds trust (Punyatoya P. 2019) The affective trust is the positive feeling consumer during an experience with e-retailers

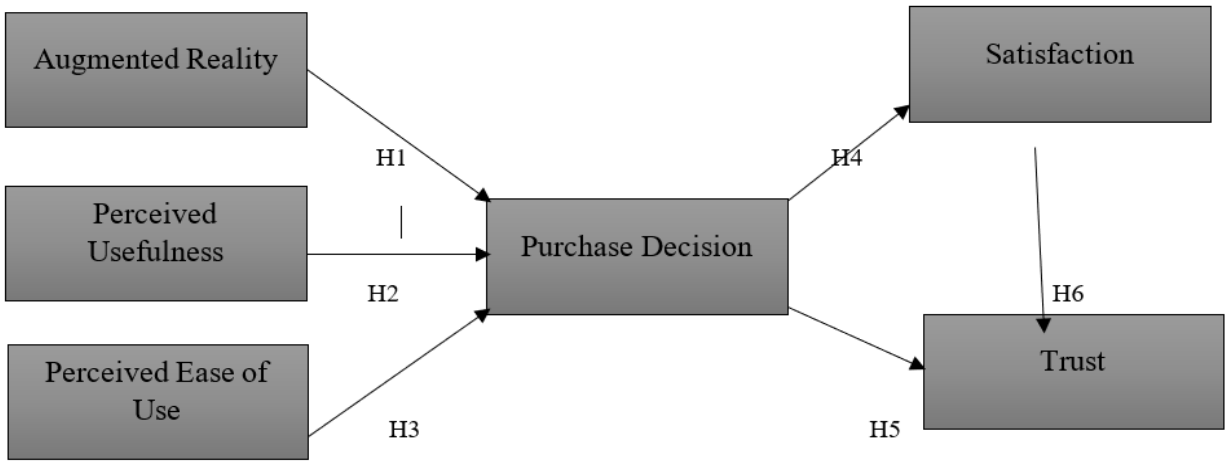
(Johnson et., al., 2005). Trust is essential for the success of e-commerce activities.

Satisfaction

Satisfaction is the state felt by a person whose requirements have been met (Islam et., al., 2011)

"Satisfaction is the standard of how the offered total product or service fulfils the customer expectations" (Gerson 1993) Customer satisfaction is a where his/her expectations match their perception of the actual received product. (Islam et., al., 2011) Customer satisfaction is vital in any business organisation, which is justified by the customer orientation philosophy and the main principles of continuous improvement modern enterprises (Teresa 2015) Customer satisfaction is one of the factors which will makes customers to connect towards particular brand or product. Every retailer's ultimate aim should be render services as expected by the customer and satisfy customers.

Figure:1 Conceptual Model and Hypothesis



III. METHODOLOGY

The study includes secondary data like articles, research papers, also it includes primary data with structured questionnaire it was collected from the customers using online shopping apps like Amazon, Myntra, Lenskart, Nike. Over 1027 customers were selected and sent a questionnaire out of which 908 respondents were selected for analysis rating from 1 Strongly Disagree to 5 Agree. Snowball sampling and convince sampling were the sampling technique adopted. Using SPSS and AMOS analysis was done for the article. To validate Augmented Reality 7 scales has been considered, Perceived Usefulness has 5 items, Purchase Decision 5 scales, Trust has 6 items and Perceived Ease of Use has 5 items Satisfaction 6 items been validated and analysed.

Data Analysis

Table 1: Demographic Analysis

Variable	Items	Frequency	Percentage
Gender	Female	486	53.53
	Male	411	45.26
	Others	11	1.21
Age	16-25	227	25.00
	26-35	386	42.51
	36-45	211	23.24
	46 and above	84	9.25

Income	Below 25,000	260	28.64
	25,000 to 50,000	316	34.80
	50,000 to 75,000	142	15.63
	75,000 to 1,00,000	106	11.67
	1,00,000 and above	84	9.26
Qualification	Doctorate	29	3.19
	PG	356	39.20
	UG	258	28.41
	Pre-University/Diploma	145	16
	High School	120	13.20
Which Online shopping do you use?	Amazon	358	39.42
	Myntra	216	23.79
	Lenskart	185	20.37
	Nike	102	11.23
	Others	47	5.18

From the above reference table 1 majority of the sample are Female with 53.53%, followed by male with 45.26%, followed by others with 1.21%. This will help us to understand the shopping behaviour females and males based on gender specific or targeting specific products in online shopping. The largest group of customers will fall in the age group of 26-35 years, with 42.51% od the total population. This age group is also called as young generation mid-carrier stage with high disposable income. Second largest customers are in between 16-25 years, with 25% followed by 36-45 years by 23.24% lastly above 46 years with 9.25%. A large number of customers fall under the income level of 25,000 to 50,000 with 316 customers of 34.80%, later customers income level with below 25,000 with 260 customers of 28.64%, followed by 50,000 to 75,000, 75,000 to 1,00,000 and above 1,00,000 with 15.63, 11.67 and 9.26 respectively. From the above population majority customers has completed PG with 356 customers of 39.20 followed by UG with 28.41, 258 customers, later 145 customers with 16%, 120 customers with 13.20% and 29 customers with 3.19% respectively. Amazon is the most popular online shopping platform, used by 39.42% of the population, likely due to its wide range of products and customer's trust. Myntra with 23.79% of customers which is known for its fashionable products. Lenskart with 20.37% and Nike with 11.23% of customers and other category has 5.18% suggests smaller number of customers which are less popular.

Table:2 Path Coefficients and Hypothesis

To		From	Hypothesis	Estimate	SE	CR	P	Results
Augmented Reality	→	Purchase Decision	H_1	0.863	0.103	7.925	***	Supported
Perceived Usefulness	→	Purchase Decision	H_2	1.650	0.186	9.1	***	Supported
Perceived Ease of use	→	Purchase Decision	H_3	0.453	0.021	3.2	0.05	Not Supported
Purchase Decision	→	E-Satisfaction	H_4	0.795	0.114	6.981	***	Supported
Purchase Decision	→	E-Trust	H_5	0.986	0.185	8.569	***	Supported
E-satisfaction	→	E-Trust	H_6	0.851	0.133	7.025	***	Supported

From the above table 2 Hypothesis testing or path analysis is concluded H1 AR has a significant positive effect on PD which is supported with estimate value of 0.863, CR is 7.925. H2 PU has a significant positive effect and supported on PD with estimate 1.650 and CR 9.1. But H3 is not statistically significant because estimate is 0.453 and CR is 3.2 with probability of 0.10. H4 is not significantly positive because probability is 0.05 so PU has a week effect on PD. H4, PD is positively significant on ES with estimate value of 0.795, CR is 6.918 and P is less than 0.001. H5 is supported because PD is positively influencing ET with estimate value of 0.986 CR is 8.569 and P is less than 0.001. Lastly H6 is also supported because ES is positively significant to ET with estimate value of 0.851, CR is 0.7052 and P is less than 0.001.

Table: 3 Pearson Corelation Matrix

	AR	PU	PEU	PD	ES	ET
AR	0.897					
PU	0.485	0.933				
PEU	0.512	0.425	0.702			
PD	0.487	0.587	0.452	0.870		
ES	0.356	0.420	0.412	0.540	0.901	
ET	0.358	0.341	0.358	0.385	0.365	0.954

From the above table 3 Pearson Corelation Matrix is calculated, it is calculated to know the corelation coefficient between variables, the level of corelation between the variables is analysed. AR is corelated with PU, PEU, PD ES and ET, with moderately positive corelation coefficient of PEU by 0.512, low positively corelation with other variables by 0.485, 0.487, 0.356, 0.358. PU is low positively corelated with PEU by 0.425, moderately corelated with PD by 0.587, low positively corelated with ES and ET by 0.420, 0.341 respectively. PEU is low positively corelated with PI by 0.452, ES by 0.412 and ET by 0.358 accordingly. Likewise, PD is low positively corelated with ET by 0.385 and moderately corelated by ES with 0.540 respectively. Lastly ET is corelated with ES with 0.365 which is low positive in nature. From the above analysis we can conclude highest corelation coefficient is between PEU and AR with 0.512, PD and PU with 0.587, ES and PD with 0.540. Lowest coefficient corelation is between ES and AR with 0.356.

Table:4 Discernment validity of the measurement model

	AR	PU	PEU	PD	ES	ET
AR	0.857					
PU	0.567	0.874				
PEU	0.580	0.687	0.956			
PD	0.365	0.520	0.454	0.841		
ES	0.325	0.489	0.395	0.486	0.752	
ET	0.315	0.562	0.308	0.584	0.506	0.859

Discernment validity of the measurement model is calculated to check the square root of AVE is more than correlations of the construct. From the above reference Table 4 the discriminant validity is achieved as all the corelations are also less than square root of AVE, so it is considered as all the factors are valid and the data is reliable.

IV. DISCUSSION

AI has been transforming into many industries including e-retailing sector. The generation of technologies into Indian fashion E-retailing has proven to be a game changer, influencing customer experience, business operations, and overall market growth. The role of AI in e-retailing is encompassing

personalised recommendations, virtual try-on's, chat boards, and dynamics pricing strategies. One of the key areas where AI has made significant impact is in personalization the shopping experience. Indian fashion E-retailing such as Myntra, Amazon, Lenskart, Nike have adopted AR and algorithm recommended products based on customers browsing history, previously purchase preference. (Lee et., al., 2006) The feature is not only enhancing customer satisfaction also increase trust on particular website/app. (Kang 2013)

AI Virtual 3D Try-ons, powered by AI and Augmented Reality (AR), have also transformed the way Indians consumers shop for fashion online products. By allowing customers to ty on clothes virtually, try specs, and also find the right colour of lipstick and foundation shades. This technology enables consumers to visualize how products will look on them and also enhancing their purchasing decisions without the need of physical try in the stores. So as consumers' use of augmented reality increases there is a growing need to understand its impact on consumer behaviour. (Javornik, A. 2016)

V. CONCLUSION

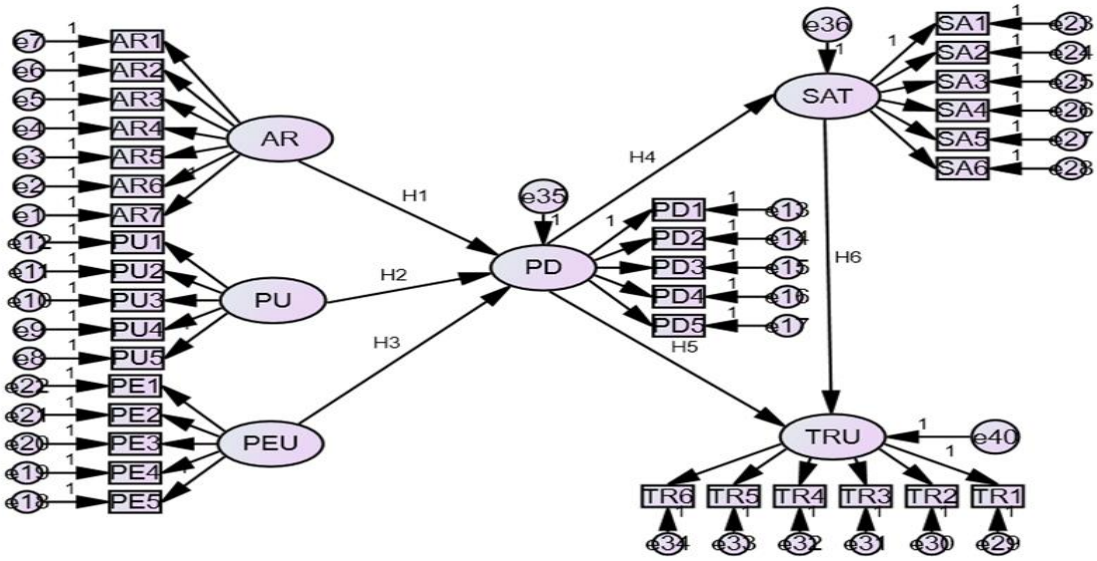
AI is playing a transformative role in the Indian fashion e-retailing industry by enhancing customer experiences, improving operational efficiencies, and providing competitive advantages. The ability to personalize shopping experiences, offer virtual try-ons, optimize inventory management, and improve customer service through AI-powered chatbots has proven essential in meeting the demands of Indian consumers. Despite the challenges, such as high costs and data privacy concerns, the benefits of AI in e-retailing are undeniable, and its continued adoption is likely to drive further growth in the sector.

For Indian fashion e-retailers, embracing AI is no longer a matter of choice but a necessity to stay competitive in an increasingly digital marketplace. Moving forward, it will be crucial for businesses to balance technological innovation with ethical considerations, ensuring that AI implementation is not only effective but also responsible. As the industry matures, AI will continue to shape the future of Indian fashion e-retailing, driving innovation, customer loyalty, and operational excellence.

VI. LIMITATIONS

This study is limited to AR, later study may be conducted for VR feature with reference to specific generation customers. Convince sampling method was adopted for the study thus its results may not be generalised throughout the country or other parts of the world, because it many differ from one country to another due to customers preferences and micro or macro environmental factors. These results are restricted to customers who shop fashion E-retailing products online, further on appeals or furniture future study may be conducted.

Figure:2 Theoretical model



REFERENCES

[1] Kumar, K. N., Chandra, S., Bharati, S., & Manava, S. (2016, June). Factors Influencing Adoption of Augmented Reality Technology for E-Commerce. In *PACIS* (p. 342).

[2] Jain, P. (2024). E RETAILING IN INDIA. *Management and Information Technology*, 27.

[3] Jain, P. (2024). E RETAILING IN INDIA. *Management and Information Technology*, 27.

[4] Mustaphi, B. M. (2020). Digital marketing strategies for effective customer relationship management. *Journal of Modern Accounting and Auditing*, *16*(8), 376-384.

[5] Chanana, N., & Goele, S. (2012). Future of e-commerce in India. *International Journal of Computing & Business Research*, *8*(1).

[6] Lee, H. H., Fiore, A. M., & Kim, J. (2006). The role of the technology acceptance model in explaining effects of image interactivity technology on consumer responses. *International Journal of Retail & Distribution Management*, *34*(8), 621-644.

[7] M. Kang, J. Y. (2014). Augmented reality and motion capture apparel e-shopping values and usage intention. *International Journal of Clothing Science and Technology*, *26*(6), 486-499.

[8] Javornik, A. (2016). Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour. *Journal of Retailing and Consumer Services*, *30*, 252-261.

[9] Kim, H. W., Chan, H. C., & Gupta, S. (2007). Value-based adoption of mobile internet: an empirical investigation. *Decision support systems*, *43*(1), 111-126.

[10] Koufaris, M. (2002). Applying the technology acceptance model and flow theory to online consumer behavior. *Information systems research*, *13*(2), 205-223.

[11] Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision sciences*, *39*(2), 273-315.

[12] Szymanski, D. M., & Henard, D. H. (2001). Customer satisfaction: A meta-analysis of the empirical evidence. *Journal of the academy of marketing science*, *29*(1), 16-35

[13] Cyr, D., Head, M., & Larios, H. (2007). *Color and information load in the interface design of websites: A cross-cultural comparison*. *International Journal of Human-Computer Studies*, 65(5), 274-292.

[14] P. R. Kotler, J. T. Bowen, and J. Makens, Marketing for Hospitality and Tourism, 6th ed. London: Pearson Education Limited, 2017.

[15] P. Kotler and K. L. Keller, Marketing Management, 14th ed. New Jersey: Pearson Education, 2012

[16] Ha, H. Y., John, J., John, J. D., & Chung, Y. K. (2016). Temporal effects of information from social networks on online behavior: the role of cognitive and affective trust. *Internet Research*, *26*(1), 213-235.

[17] Morrow Jr, J. L., Hansen, M. H., & Pearson, A. W. (2004). The cognitive and affective antecedents of general trust within cooperative organizations. *Journal of managerial issues*, 48-64.

[18] Dabholkar, P. A., van Dolen, W. M., & de Ruyter, K. (2009). A dual-sequence framework for B2C relationship formation: Moderating effects of employee communication style in online group chat. *Psychology & Marketing*, *26*(2), 145-174.

[19] Punyatoya, P. (2019). Effects of cognitive and affective trust on online customer behavior. *Marketing Intelligence & Planning*, *37*(1), 80-96.

[20] Johnson, D., & Grayson, K. (2005). Cognitive and affective trust in service relationships. *Journal of Business research*, *58*(4), 500-507.

[21] Islam, M. A., Khadem, M. M. K., & Alauddin, M. (2011, January). An empirical assessment of the relationship between service quality and customer satisfaction in fashion house. In *Proceedings of the 2011 international conference on industrial engineering and operations management* (pp. 201-206).

[22] Gerson, R. (1993). *Measuring customer satisfaction*. Crisp Learning.

[23] Islam, M. A., Khadem, M. M. K., & Alauddin, M. (2011, January). An empirical assessment of the relationship between service quality and customer satisfaction in fashion house. In *Proceedings of the 2011 international conference on industrial engineering and operations management* (pp. 201-206).

[24] Teresa, G., & Evangelos, G. (2015, May). Importance of logistics services attributes influencing customer satisfaction. In *2015 4th International Conference on Advanced Logistics and Transport (ICALT)* (pp. 53-58). IEEE.