

An Analytical Study on Awareness, Perception, and Benefits of AR Applications Among Consumers

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Abstract

Augmented Reality (AR) is an emerging technology that blends digital information with the real world, transforming the way consumers interact with products, services, and experiences. This study aims to explore consumer awareness, perceptions, and the benefits of AR applications across sectors such as education, gaming, and online shopping. A descriptive research design was adopted, with primary data collected from 100 participants in Coimbatore through Google Forms and face-to-face surveys, and secondary data gathered from academic journals, textbooks, and industry reports. The study focuses on assessing the level of consumer awareness, analysing market trends and perceptions, and identifying the advantages and challenges associated with AR applications. The findings provide insights into consumer behaviour, adoption patterns, and potential strategies for businesses to enhance engagement and usability. This research highlights the growing importance of AR in shaping future consumer experiences and market opportunities.

Keywords: Augmented Reality, Consumer Awareness, Perception, Market Trends, Benefits, AR Applications, User Experience

Introduction

The study concludes that Augmented Reality (AR) applications have achieved a considerable level of awareness and acceptance among users, with an overall positive perception regarding their usefulness and applicability. The findings indicate that AR applications provide significant benefits such as enhanced visualisation, improved understanding, and increased user engagement across various domains. Despite these advantages, the study highlights the need for greater awareness initiatives, user-friendly design, and continuous technological advancements to ensure wider adoption. The study contributes to existing literature by offering empirical insights into users' awareness, perception, and perceived benefits of AR applications, thereby addressing an existing research gap. In conclusion, AR technology holds substantial potential for future development and, if effectively implemented, can play a transformative role in shaping digital interactions and user experiences.

Review of Literature

Antony Cynthia et al. (2025)¹ focused on how the convergence of immersive technology and the retail industry has changed the consumer experience. Augmented Reality (AR) and Virtual Reality (VR) have changed the way products are displayed to consumers, the way they are purchased, and the way they are experienced. AR and VR offer target consumers interactive, visual, and gamified environments to engage in and surpass the limitations of traditional online and in-person shopping. Customers can not only break away from the monotony often associated with online shopping, but they can also virtually try on clothing, visually place fitting furniture in their homes, and explore entire virtual storefronts from their smartphones or - even better - utilising VR headsets. This paper will demonstrate how AR and VR are shaping modern retail into a consumer experience-based environment centred around innovation, convenience, and personalisation. This paper will delve into the main uses and applications, consumer behaviours, impact on the business, challenges related to AR and VR, and future trends.

P. Maheshwari et al (2025)² in the article examined the swift evolution of Virtual Reality (VR) technology, which has created significant opportunities across various industries, particularly in marketing and advertising. This research investigates the application of VR in advertising to understand how immersive experiences can improve consumer engagement, foster emotional connections, and increase purchase intentions. It assesses

both the advantages and challenges of VR advertisements from the viewpoint of consumers. The study identifies key factors that affect customer adoption, including perceived interactivity, personalisation, and the realism of the experience. It also addresses concerns such as high development costs, limited availability of VR devices, and potential health risks. Data was gathered through a structured questionnaire distributed via Google Forms and analysed using percentage analysis and Likert scale techniques. The research is bolstered by a thorough literature review that examines the strategic use of VR in marketing and its effects on consumer behaviour. Ultimately, the findings enhance the understanding of how VR can be effectively incorporated into advertising strategies, providing valuable insights for marketers, developers, and businesses aiming to gain a competitive advantage in the digital landscape.

Varunan et al (2024)³ made a theoretical framework of Smart, new digital technologies that have an impact on a variety of environments and sectors involve virtual reality and augmented reality. The transition from traditional to digital or blended learning methods and tools is one of the most significant breakthroughs in higher education. For all relevant stakeholders, adopting and using these immersive tools presents a number of difficulties. The study's goals included learning how students perceive the use of augmented reality and virtual reality technologies, as well as learning in higher education. The research was constructed on the theoretical underpinnings of the Technology Approval Model (TAM) to achieve this goal (TAM). A study model was empirically tested among students of higher educational institutions in Bengaluru, Karnataka. 294 students made up the sample group, and data were gathered using an online survey. SPSS 23 was used to analyse data. Findings from multiple regression and ANOVA analysis show that perceived usefulness, confidence, and awareness, as well as perceived ease of use, have a greater impact on students' perceptions and are key predictors of whether and how often they will embrace and use these immersive technologies. These results support the development of TAM theory and the successful application of interactive technologies in higher education. The results of the research will aid higher education institution leaders and management in concentrating on creating infrastructure, educating instructors, and developing creative pedagogy for incorporating immersive augmented and virtual reality technologies into curricula.

Krishna Yatin Thakkar et al. (2023)⁴ critically analysed research paper aims to investigate the role of augmented reality technology in marketing campaigns and its influence on consumer engagement, brand experiences, and purchase decisions. The study explores the various applications of AR in marketing, analyses its effectiveness in capturing consumer attention, and examines the outcomes of AR-based campaigns on consumer behaviour. Through a comprehensive review of relevant literature and empirical analysis, this paper provides insights into the potential of AR as a strategic tool for enhancing consumer engagement and driving brand success in the modern marketing landscape.

Statement of the problem

The AR market is evolving quickly, with applications in education, gaming, and online shopping creating new opportunities for businesses. However, challenges such as limited user awareness, varying levels of technological literacy, and uncertainty about practical benefits can hinder widespread adoption. This study aims to assess consumer awareness of AR applications, analyse market trends and perceptions, and explore the benefits and advantages AR provides to users. By identifying gaps in adoption and understanding consumer needs, the research can help businesses develop effective strategies for AR integration, improve user experiences, and foster greater acceptance of this technology. Ultimately, these insights are crucial for ensuring that AR reaches its full potential in influencing consumer behaviour and shaping the future of digital interaction.

Objective of the study

1. To assess the level of consumer awareness regarding the use of Augmented Reality applications.
2. To analyse market trends and consumer perceptions related to Augmented Reality applications.
3. To explore the benefits and advantages of using Augmented Reality applications for consumers.

Research Methodology

The present study adopts a descriptive research design to systematically examine and describe the opinions, perceptions, and experiences of individuals regarding Augmented Reality (AR) applications. Primary data was collected from 100 participants in Coimbatore through Google Forms and face-to-face interviews, targeting family, friends, and colleagues to ensure diverse representation. Secondary data was obtained from textbooks, academic journals, office records, library resources, and online reports to supplement the primary data. Participants were selected using simple random sampling to provide each individual an equal opportunity to be included, enhancing the reliability of the study. In practice, convenience sampling was applied, selecting respondents based on their availability and willingness to participate. The data collection period spanned from November 2025 to January 2026. The study applied the following Statistical Tools are: Simple Percentage Analysis, Likert Scale Analysis, and Friedman Ranking Analysis.

Data Analysis & Interpretation

Table No : 1
Personal outline of the Responde

Personal Profile	Particular	No of Respondents	Percent
Gender	Male	77	77
	Female	23	23
Age	18-28	49	49
	19-38	42	42
	39-50	9	9
Educational qualifications	secondary	12	12
	Higher Education	23	23
	Under graduate	41	41
	Post graduate	24	24
Occupational Status	Unemployed	17	17
	Housewife	24	24
	Student	34	34
	Entrepreneur	11	11
	Private employee	8	8
	Government Employee	6	6
Purpose for using AR/VR technology	Gaming	24	24
	Shopping	22	22
	Education	54	54

Source: Primary Data

Interpretation

From the table no 1, the majority of the respondents are male (77%). Most of the respondents are aged between 18 and 28 (49%). Most of the respondents are undergraduates (41%), and most of the respondents are students (34%). The majority of respondents are using AR/VR technology in Education (54%).

Table No: 2
Sources of Awareness

S.No	Sources of awareness	Number	Percentage
1	Friends and Family	57	57
2	Online Reviews and Ratings	12	12
3	Social Media	18	18
4	Company Websites	7	7
5	Advertisements (TV/Newspaper/Magazines)	6	6
	Total	100	100

Source: Primary Data

The above table 2 reveals that 57% of the respondents have come to know about the AR Application through friends and family,18% of the respondents knew by social media,12% of the respondents through online reviews and ratings,7%of the respondents knew through the company website, and 6% through advertisement TV/Newspaper.

CHART NO: 1
Sources of Awareness of the Respondents

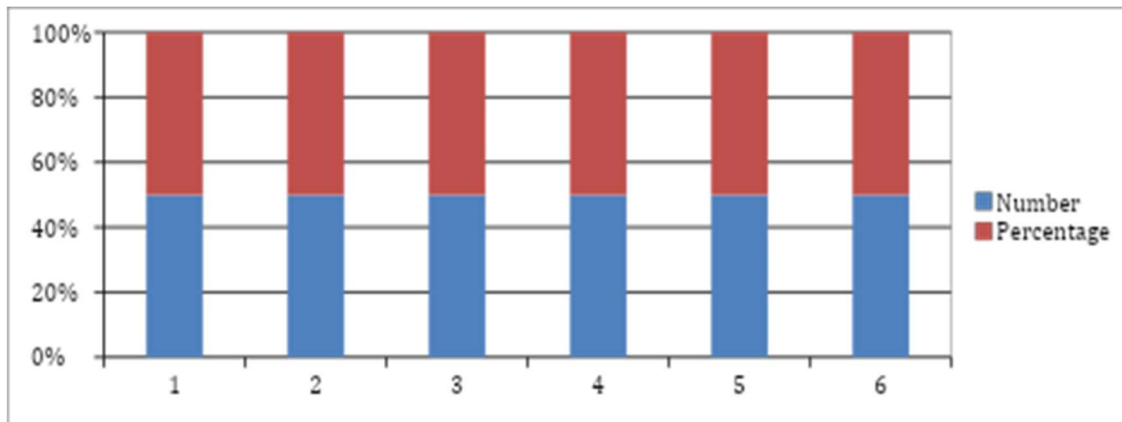


Table No -3
Consumer Perceptions Related to Augmented Reality Applications.

Statements	Level	SA	A	N	D	SD	Total	Mean
	Score	5	4	3	2	1		
AR applications are useful for enhancing user experience.	No	43	28	9	11	9	100	3.85
	Score	215	112	27	22	9	385	
AR applications make products/services more engaging and interactive.	No	51	13	12	16	8	100	3.83
	Score	255	52	36	32	8	383	
AR applications help in making better decisions (e.g., shopping, learning).	No	32	28	21	13	6	100	3.67
	Score	160	112	63	26	6	367	
AR applications are easy to use and user-friendly	No	41	26	17	13	5	100	3.91
	Score	205	104	51	26	5	391	
AR applications are innovative and modern compared to traditional methods.	No	44	26	14	12	4	100	3.68
	Score	220	78	42	24	4	368	
The overall experience of using AR applications meets my expectations.	No	37	24	19	17	3	100	3.75
	Score	185	96	57	34	3	375	

(Strongly Agree-SA, Agree-A, Neutral-N, Disagree-D, Strongly Disagree SD)

Source: Primary Data

The table no 3 shows that AR applications enhance user experience, 43% strongly agree (SA) and 28% agree (A), indicating a high level of positive perception. Regarding engagement and interactivity, 51% strongly agree, and 13% agree, showing strong support, particularly at the “strongly agree” level. In terms of decision-making support, 32% strongly agree,e and 28% agree, suggesting moderate but favourable acceptance.

Ease of use shows the strongest response, with 41% strongly agreeing and 26% agreeing that AR applications are user-friendly. Further, 44% strongly agree, and 26% agree that AR applications are innovative and modern. Finally, for overall experience meeting expectations, 37% strongly agree, and 24% agree, reflecting overall satisfaction with AR applications.

Table No: 4
Friedman Ranking Analysis - Attitudes toward themes

S.No	Attitudes toward themes	Mean Rank	Rank
1	Excitement	4.47	5
2	Euriosity	4.19	2
3	Enjoyment	4.13	1
4	Confusion	4.93	10
5	Discomfort	4.52	6
6	Indifference	4.27	3
7	Enthusiasm	4.46	4
8	Frustration	4.59	7
9	Interest	4.84	9
10	Disappointment	4.78	8

Source: Primary Data

Based on the mean rank the table no 3 depicts that the customer gives first rank to enjoyment (4.13), the second rank is given to euriosity (4.19), third rank was given for indifference (4.27), enthusiasm was ranked fourth (4.46), fifth rank is given for excitement (4.47), sixth rank was given for discomfort (4.52), seventh rank was given to frustration (4.59), followed by eighth rank is given for disappointment (4.78, interest was ranked at ninth (4.84), also confusion was ranked as last rank (4.93).

Suggestion

Based on the findings of the study, several practical suggestions are proposed to enhance the effectiveness and adoption of Augmented Reality (AR) applications. First, organisations and developers should focus on improving user awareness through proper demonstrations, training programs, and digital campaigns, as many users are still not fully familiar with the complete potential of AR technology. Second, AR applications should be designed in a more user-friendly and intuitive manner to ensure easy accessibility for users with different levels of technological knowledge. Simplifying interfaces and providing clear guidance can significantly improve user experience and satisfaction. Third, businesses and service providers can integrate AR features more effectively into their products and services to increase customer engagement, trust, and purchase intention. Especially in sectors such as education, retail, and marketing, AR can be used as a powerful tool to enhance interactive learning and decision-making. Continuous updates and feedback mechanisms can help in improving application quality and meeting user expectations. Finally, future researchers are encouraged to conduct similar studies with a larger sample size and across different regions or industries to obtain more comprehensive and generalised results. This would contribute to a deeper understanding of user perception and the long-term benefits of AR applications.

Conclusion

Augmented Reality (AR) applications have become an important part of modern digital life by enhancing real-world experiences through the integration of virtual elements. With the rapid growth of smartphones, internet connectivity, and advanced technologies, AR applications are increasingly used in various fields such as education, retail, healthcare, entertainment, tourism, and marketing. These applications enable users to visualise information more clearly, interact with digital content in real time, and make better decisions, thereby improving overall user experience and satisfaction. This analytical study focuses on understanding the level of awareness, perception, and benefits of AR applications among users. It examines how users perceive AR technology and the advantages they gain from its usage in their daily and professional activities.

This study also attempts to bridge the existing research gap by providing practical insights into user awareness and perceived benefits of AR applications, which can support organisations, developers, and educators in promoting the effective adoption and future development of AR technology.

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