EXPLORING AWARENESS, EXPERIENCE, AND THE EFFECT OF AUGMENTED REALITY ADVERTISEMENTS ON GEN Z

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ABSTRACT
This paper explores powerful promotional tool Augmented Reality Advertisements and its impact on Gen Z. The major factors considered are awareness of these advertisements, the effect these have on Gen Z, and this generation's experience of AR Advertisements. Using a structured questionnaire tool, random stratified sampling was used to collect data from respondents. The findings of this study through the analysis of 177 fully filled and qualified forms reveal that amongst different MBA course specializations, Sales & Marketing students are more aware about AR ads compared to other specializations. The results also positive response for the Brand experience with respect to AR Advertising. Regarding the effect of AR advertisements on these Gen Z students, 66 % of total students feel that these AR advertisements are effective and have the potential to change the Indian advertising industry. The preferred modes to interact with AR Ads are through AR Games, interactive videos, and immersive Experiences, while the least preferred mode is Interactive 3D models. The findings of this study can be beneficial for advertising agencies and organizations to increase usage of AR advertising to attract, engage, and retain these Gen Z customers.
Keywords: Augmented Reality, Advertisements, Gen Z, AR Games, Interactive 3D Models

Introduction

Augmented Reality (AR) advertising is a form of digital advertising that uses computer-generated images and sound to create an immersive experience for the actively participating user. It is an interactive digital experience that overlays virtual objects or information onto the real-world environment, enhancing the perception of the user about the world around them. AR experiences can be delivered through different devices like smartphones, tablets, and smart glasses. By using a device's camera and sensors, AR allows users to interact with virtual objects or information as if it were part of their physical surroundings. Through AR-based applications, customers can interact with virtual objects and get a sense of the product through a 'try before you buy' experience. The adoption of AR was demonstrated by the Pokémon Go phenomenon in 2016. People of all ages who used their smartphones to capture virtual creatures that appeared on their screens but were not physically present, by engaging with this game.

Generation Z, also known as Zoomers, is the demographic cohort succeeding Millennials and preceding Generation Alpha. Researchers and popular media use the mid-to-late 1990s as starting birth years and the early 2010s as ending birth years. Generation Z, also called Gen Z, I Generation, centennials, post-millennials, or Home-landers, are people born during the late 1990s and early 2000s. Some sources give the specific year range of 1997–2012. This generation reared on the internet & social media, with some of them already graduated and joined the job. They are more creative, self-expressive, and have distinct interactions with modern digital culture. Augmented reality and virtual try-on technology are popular among Gen Z and they form a sizable proportion of consumers.

AR advertising can be used to create interactive experiences that engage the user to create a lasting impression. AR advertising is especially effective for Gen Z, as it is highly tech-savvy, well-informed, conscious of their choices and engages with digital content. AR advertising can be used to create engaging experiences, capture the attention, drive engagement & loyalty of Gen Z and make the brand more memorable for them. By leveraging AR technology, brands can create interactive experiences which are customized as per interests and needs of Gen Z. These can be virtual product demonstrations, interactive games, and immersive storytelling. As Gen Z continues to become a larger part of the consumer market, AR advertising will become an increasingly important tool for marketers to reach this demographic group.

AR experiences can be from simple informational overlays to more complex games and immersive 3D simulations. In advertising, AR experiences are often used to create engaging and interactive campaigns that can aid brand awareness and customer loyalty. AR can be used to showcase products, provide additional product information, or create a unique user experience that generates social media buzz. Overall, AR experiences have the potential to increase user engagement and create memorable experiences that can make a lasting impression on consumers. Gen Z now considers AR technology as fun and engaging and encourages brands to adopt this into their marketing strategies. The consumer experiences which include AR can almost double the customer engagement compared to a non-AR experience as it produces high-attention levels from its users.

Gen Z or Zoomers spend 7 to 9 hours a day on screens for social media and shopping. They also use their smartphones to shop more than any generation before. These will increase further with the deployment of 5G speeds for AR technologies. AR technology enables a gaming experience throughout the entire customer journey — from initial interaction with a product through playable ads to trying it on in a virtual fitting room. Brands engage in playable ads and an AR-powered gaming social experience to cater to the preferences of this camera-native generation.

AR was found to be more effective in building brand awareness than in persuading users to make a purchase. The key to promotional success lies in customer interaction, and AR facilitates this process. Marketers will need to change their strategy to reach this largest customer generation. It's a collaborative environment in which producers and consumers push each other to new heights. Gen Z interacts with augmented reality in a very straightforward and intuitive manner, pointing to a very promising future for AR.

This paper explores Augmented Reality Advertisements and their awareness, experience, and effect on Gen Z. The results of the study indicate a good level of awareness about Augmented Reality advertisements amongst Gen Z. Most of them feel that these advertisements can help in increasing which will lead to greater customer engagement. Through these findings, organizations can relook at their usage of AR advertisements. The findings will aid marketing advertising and content-creating agencies to use suitable AR advertising tools like games, 3D models, interactive videos, etc. This work attempts to find the relevance of AR advertisements for Gen Z.

Literature Review

Tripathy, Panda (2021) investigated the availability of resources and the level of awareness regarding AR among teacher educators and pre-service teachers. Their findings indicated that teacher education institutes in Odisha possess sufficient resources for implementing AR in classrooms. Sinha, Modak (2019) explored customer perception and awareness of AR advertising and its impact on their decision-making process. Their results indicated that AR advertising allows marketers to effectively demonstrate their products, leading to better product evaluation by customers. AR-based advertisements also help companies stand out among competition and create a favourable impression. Their survey results demonstrated that respondents showed a higher interest in products that incorporated AR advertising than traditional advertising methods.

Cardinal (2017) stated that the integration of heads-up displays in automobiles has increased by offering drivers essential information like speed, temperature, fuel level, navigation etc. without causing distractions. In certain vehicle heads-up displays, real-time street views are augmented with a GPS-based turn-by-turn directions. They outlined methods for displaying advertisements to passengers inside vehicles by utilizing Augmented Reality (AR)-capable windows. Scholz, Smith (2016) presented a framework outlining the active and passive elements of AR and provide guidance for marketers to planning their AR campaigns. They highlighted the importance of considering the interactions between these elements to optimize consumer engagement, including user-brand engagement, user-user engagement, and user-bystander engagement. Through the framework, they offer eight actionable recommendations, summarized by the acronym ENTANGLE, to help marketing managers design immersive AR experiences that maximize consumer engagement.

Mahony (2015) state that digitally mediated experiences have expanded beyond virtual forms in synthetic environments and augmented reality (AR) emerged has as a technology that seamlessly integrates virtual information into the physical world. They state that there is a gap in understanding societal implications of AR. They explore the role of AR in marketing communications using qualitative approach and deriving insight from key social actors, resulting in several findings regarding AR's role in marketing communications. They presented a model for the deployment of AR and proposed heuristics for marketing professionals.

Brinkman (2014) explores the fundamental concepts of AR and with examples of its current applications. He focuses on the ethical challenges that may arise with increasing use of this technology. He delved into two examples: augmented reality in the home which raises privacy concerns, and augmented reality advertising

which poses implications for property rights and local governance. Perannagari (2020) studied the impact of AR on retailing by conducting thematic analysis of 232 variables in 35 research papers to identify patterns in the data set. They formed conceptual model for user's decision-making process with eight themes. They suggest that marketers should incorporate AR technology into their experiential marketing strategies. lLazim, Rahman (2015) gathered information regarding awareness, perception, interest, and simulation excitement responses in the presence of AR in Malaysia. Brainstorming, keywords search was done for samples of AR videos. They determined the design of AR visual interface to create persuasive effect of the visual usage in AR Application in Malaysia.

Wafa, Hashim (2016, May) studied the usage of mobile Augmented Reality (AR) advertisements by organizations in Malaysia. He also interviewed advertising agency professionals to assess brands' willingness to incorporate mobile AR advertisements. The results explain prevailing AR market in Malaysia by offering insights into the level of acceptance of this technology in Southeast Asia. Chylinski (2020) defined ARM as a customer-oriented interface to implement digital marketing technologies in physical environments. Building on theory of 'situated cognition' from social psychology, they identified distinct set of digital capabilities that ARM offers. They constructed a framework to understand ARM experiences and synthesize existing research and applications.

Davidavičienė (2021) evaluated the user experience AR Mobile applications offered recommendations for their development. They identified key factors that contribute to a positive user experience, including clear application purpose, user-friendly interface, smooth operation, creative information presentation, and interactivity. Vo (2022) studied influence of immersive experience on customer's attitude and intention to adopt mobile augmented reality applications (MAR apps). They studied the effect of technology anxiety on the relationship between immersive experience, attitude, and adoption intention towards MAR apps. Their findings from 300+ customers indicate that immersive experience has a significant impact on attitude and adoption intention towards MAR apps. The study also reveals the important role of technology anxiety in moderating the relationship between customer immersive experience and their responses towards MAR apps.

Chakraborty, Gupta (2017) studied the factors that influence Indian consumers' adoption of Augmented Reality when shopping online. The research focuses on personality traits, innovation-seeking behaviour, tech savvy-ness, and the desire for an enriched shopping experience. The findings suggest that gadget lovers and frequent online shoppers are more likely to be inclined towards trying Augmented Reality for online shopping. Haile, Kang (2020) examined how the features of a mobile AR application affect consumers' attitudes and purchasing intentions, specifically focusing on the cognitive, affective, and conative dimensions of persuasion. The results show that real-time interactivity and entertainment provided by the MAR application positively influence cognition and affection, respectively, while irritation with the application negatively affects affection. The study also shows a positive influence of the MAR application on enhancing consumers' purchasing intention.

Dasgupta (2021) studied the impact of the Big Five personality traits - extraversion, openness, agreeableness, conscientiousness, and neuroticism - on AR's role in interactive marketing. With data from 230 graduate and postgraduate Indian students, they found that openness is positively associated with the perceived ease of use of AR, the usefulness of AR, and subjective norms. Whereas neuroticism is negatively associated with the perceived ease of use of AR. Extraversion is positively associated with subjective norms. The perceived ease of usage and usefulness of AR, and subjective norms positively influence attitudes toward AR.

Nagra, Gite (2023) focused on the point of interaction in utilizing digital advertising technologies in physical AR advertisements to communicate the usability of their products. Users can engage with the product and digital content through AR-based software. They showed that AR advertisements help marketers to better showcase products and allow customers to evaluate them more effectively. AR-based advertising helps overcome competition and creates a stronger brand image in customers' memory. The study revealed that customers were more interested in products using AR advertising compared to traditional advertising. Utilizing the key elements of situated cognition theory, they developed a framework of ARM experiences to collate existing research and applications and provide directions for future exploration.

Augmented reality (AR) techniques have played a crucial role in bridging the gap between customer expectations and company offerings. AR seamlessly integrates digital components into the customer's perception of the real world, creating natural and engaging experiences. This chapter highlights the significance of AR in sales and marketing and explores how companies leverage it to create customer delight. Engaging customers with brands has become easier than ever. The primary objective of this chapter is to emphasize the importance of AR in the ever-changing landscape of sales and marketing. It reveals how AR applications inspire and benefit consumers, leading to changes in brand attitudes. (Sharma 2022)

Lampropoulos (2022) offers insights into the consumer's perspectives, sentiments, and attitudes regarding the adoption, integration, and use of augmented reality (AR) and virtual reality (VR), in education. They used dataset of 17 million+ tweets from January 2010 to December 2020 divided into four datasets, two for the general use of AR and VR, and two for educational use. They found that the majority of the public held a positive outlook towards both the general and educational use of AR and VR. The analysis revealed 11 topics, including education, new technologies, digital and social media use, marketing and advertising, industrial applications, health-related applications, gaming, fitness and exercise, devices, travel and tourism, and software development kits.

Rejeb (2021) identified key drivers enabling the use of AR in retail marketing as enhancing the consumer experience, improving the customer-brand relationship, supporting marketing activities, and promoting marketing competitiveness. They also identified challenges associated with the adoption of AR in marketing, including technical limitations, consumer-oriented challenges, technological immaturity, and organizational hurdles. Minh (2020) examined the perceptions and behaviours of consumers, advertisers, and AR service providers towards AR-integrated advertisements in Vietnam. The findings show that AR interactivities have a positive impact on consumer perception and behavioural intentions. The study identifies young millennials and the first-generation Z as the most promising target audience due to their high engagement with the technology and mobile devices.

Yang (2020) studied the factors influencing the effectiveness of AR in advertising and to determine when and why AR impacts advertising outcomes. The findings reveal that the use of an AR advertisement enhances consumers' attitude towards the ad by increasing their curiosity and attention towards the content. These effects are more among consumers unfamiliar with AR ad technology. This provides valuable insights for advertisers who are considering incorporating AR into their advertising strategies.

Jayawardena (2023) studied consumer attitude persuasion in relation to AR & VR types of advertisements. The study highlighted the importance of advertisement quality, demographic differences, and the technological context in facilitating central route persuasion in virtual reality and augmented reality advertisements. Variables like source credibility, social presence, and message content are identified as influential factors for persuasion under the peripheral route. This study provides a framework to examine consumer attitudes in the context of VR and AR advertisements, drawing upon the social psychology theory of elaboration likelihood model (ELM).

There are potential benefits of AR for consumers like enhanced interactivity, access to personalized virtual inventories, improved customer support, and seamless integration between online and offline shopping experiences. AR strategy can bring advantages to brands & retailers in terms of increased sales, higher customer satisfaction, reduced costs, improved cross-selling opportunities, and better support outcomes. They present a six-step process for effectively planning and implementing AR initiatives to maximize the potential of AR and leverage it to achieve marketing objectives successfully. (Berman, Pollack 2021)

Lin (2023) studied the advertising effects of AR ads in entertainment programming using Limited-Capacity Model and Schema Congruity Theory (SCT) as theoretical frameworks. They considered four factors: type of product placement, congruence with program characteristics, cross-screen advertising, and culture (United States vs. Taiwan). The results reveal that for American viewers, incongruent brand recall is higher than congruent recall, while Taiwanese viewers exhibit more favourable attitudes towards AR dynamic advertisement presentations of congruent title sponsorships. Their findings underline the influence of cultural differences in global AR advertising campaigns.

Hilal (2023) studied the impact of AR on the purchasing behaviour of 812 online Saudi buyers. They found positive correlations between AR factors (hermeneutic, embodiment, and background) and dimensions (quality, fun, and creativity) and the purchase experience. Young women (age 17–26) mainly use AR for buying clothes and accessories, and most of the sample shops are available locally through mobile apps. The results show that AR has a significant influence on buying decisions. The findings indicate that gender, social status, education level, and monthly income impact participant's response to AR, with married women displaying more favourable views. Age or the number of family members didn't have any significant differences. The participants of study reported positive AR experience, and their concerns and anxiety did not affect their purchasing experience.

Ibrahim (2023) studied the impact of AR marketing communication on the intention to purchase among prospective homebuyers. The results show that AR applications as a marketing communication channel significantly influence the intention to purchase among potential homebuyers. AR technologies will

revolutionize property sector marketing practices through advancements in promoting housing projects and assisting developers in attracting buyers based on their specific interests.

Objectives
- To explore awareness about Augmented Reality Advertisements in Gen Z
- To study the effect of Augmented Reality Advertisements on Gen Z
- To examine experience of Augmented Reality Advertisements on Gen Z

Research Methodology
This paper used primary & secondary method of data collection. The secondary data collection was conducted through a systematic review of literature using an archival method. It discusses varied literature obtained from published research papers and articles.

Primary data was collected through a structured questionnaire as tool. Random stratified sampling was used to collect data from 250 Gen Z respondents. These Gen Z respondents are PGDM/ MBA students from Pune city. Out of received forms, 177 were found to fully filled and the same 177 qualified forms were considered for data analysis. The questionnaire was divided into different components as: Awareness about Augmented Reality advertisements, Experience of Augmented Reality advertisements, and the Effect of Augmented Reality advertisements.

Data Analysis
Using a structured questionnaire as a tool and random stratified sampling, 177 complete and qualified forms were used for analysis. The results for each section i.e., awareness, experience, and effect are as:

Awareness regarding Augmented Reality Advertising

Awareness Vs Specialization								
PGDM/MBA Specialization	Low 1	Moderate 2	High 3	Very High 4	Maximum 5	Total	Total Rating	Mean
Finance	3	30	9	2	0	44	98	2.23
HR	0	2	1	0	0	3	7	2.33
Operations	0	1	2	0	0	3	8	2.67
Sales & Marketing	6	38	42	22	18	126	386	3.06
Other	0	1	0	0	0	1	2	2.00
Total	9	99	54	13	2	177	501	2.83

Table 1: Awareness & Specialization

The mean for Sales & Marketing specialization is indicating positive response of 3.06 for Awareness of AR Advertising. And they constitute 71% of the total sample population. However, for all specializations together, mean is 2.83. That is, Sales and marketing students are more aware about these AR ads compared to other specializations.

Experience of Augmented Reality Advertising

Brand Experience Vs Specialization								
PGDM/MBA Specialization	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	Total	Total Rating	Mean
Finance	0	2	24	18	0	44	148	3.36
HR	0	0	1	2	0	3	11	3.67
Operations	0	0	1	2	0	3	11	3.67
Sales & Marketing	0	0	35	81	10	126	479	3.80
Other	0	0	0	0	1	1	5	5.00
Total	0	2	61	103	11	177	654	3.69

Table 2: Experience & Specialization

The mean for every specialization is indicating positive response for the Brand experience with respect to AR Advertising. And total mean of 3.69 indicates positive experience with AR advertising by Gen Z.

Effect of Augmented Reality Advertising

Effect Vs Specialization				
PGDM/MBA Specialization	Yes	No	Not Sure	Total
Finance	28	1	15	44
HR	1	0	2	3
Operations	3	0	0	3
Sales & Marketing	84	0	42	126
Other	1	0	0	1
Total	117	1	59	177

Table 3: Effect & Specialization

Considering the effect of AR advertisements on these Gen Z students, 126 out of 177 i.e., 66 % of total students feel that these AR advertisements are effective and have the potential to change the Indian advertising industry.

Preferred mode of Augmented Reality Advertising

Preference for interaction of AR Ad modes	
All modes	3.62
AR Games	3.68
Immersive Experiences	3.53
Interactive 3D Models	3.43
Interactive Videos	3.67

Table 4: Preference mode of AR Advertising

The mean for every category indicates the average rating it gets for that category from these Gen Z students. The highest mean is for the AR Games (3.68), which indicates that the students prefer to interact with AR Ads through AR Games category. Gen Z's next preferred modes are interactive videos and immersive Experiences. And the lowest mean is for the Interactive 3D models (3.43), which is least preferred mode to interact with AR advertising.

Findings
The findings of this study reveal that Sales & Marketing students are more aware about AR ads compared to other specializations. The mean for every specialization and all students is indicating positive response for the Brand experience with respect to AR Advertising. Regarding the effect of AR advertisements on these Gen Z students, 66 % of total students feel that these AR advertisements are effective and have the potential to change the Indian advertising industry. The preferred modes to interact with AR Ads are through AR Games and interactive videos while the least preferred mode is Interactive 3D models.

Limitations
This study has some limitations. First, the scope of the study was limited to the extent of understanding expectations of the Gen Z; most of whom are yet to start the first job. Therefore, it did not investigate whether they will have different opinions after staring to earn. Second, although the sample consisted of 170+ respondents, all the respondents belonged management students of one cosmopolitan city. Future studies can cover multiple educational backgrounds and different locations. Third, this study was more exploratory in nature than attempting to establish causality. Subsequent studies can establish relationships.

Conclusion
Considering the responses of these gen Z students on different parameters like Awareness, Experience, Effect, and preferred mode to interact with Augmented Reality Advertising, the higher interactive experience of these

advertisements by Gen Z will lead to increased customer engagement. This in turn will improve revenues of organizations as they will be offering what is expected by these Gen Z customers. It will also help organizations, advertising agencies to place their products at the top of clients' mind and get higher return on their investments on these advertisements. The findings of this study can be beneficial for advertising agencies and organizations to focus on AR advertising to engage Gen Z customers and gain a higher return on their investment.

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