EFFECT OF AUGMENTED REALITY ADVERTISING ON PURCHASE INTENTION

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ABSTRACT

In advertising, Augmented Reality (AR) is considered to be the latest smart innovation used for advertising and marketing different products and services. By the use of this technology, the brands and the companies engage in interaction with the target audience to retrieve the expectations of the existing and potential users. However, significant factors are associated with the adoption of AR technology. This study aims to find the effect of augmented reality advertising on purchase intention. For this purpose, the study focused on various factors, including informativeness, entertainment, credibility, and irritation, which lead to the purchase intention. For the study design, the researcher has used an experimental research strategy. The respondents were shown augmented reality-based advertisements to learn about their experiences. The outcomes obtained from this research revealed that augmented reality-based advertisements are very informative and entertaining as compared to other mediums. All the factors examined in the study have a significant impact on purchase intention. This is, therefore, concluded that marketers must consider the use of AR in their advisements, which is easy to use and entertaining and does not irritate the customers. This research has also demonstrated that AR technology is one of the best approaches which can be used for creating interactive experiences with customers and provide them with adequate services and products.

Keywords: Advertisement; Augmented Reality; Mobile Technology; Purchase Intention; Marketing Strategies.

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INTRODUCTION
In the era of technology, technological advancements are increasing day by day, and other older technologies have a short lifecycle and are going extinct. For instance, smartphones replace cellular and Symbian phones. In the future solar cars, hybrid and electrical cars will replace normal cars. Due to technology, today, handwritten letters are replaced by text messages. Now alarm clocks, torch lights, radios, music players, calendars and watches are replaced by one smartphone (Javornik, 2016). These technological innovations are done due to the needs, wants, and demands of people. Advertising is one of the marketing tools used for product awareness, promotional activities, etc., which influences people and their purchase intention about the more attractive product or which characteristics people are searching (Jamil, 2019). The marketing department of a manufacturing company provides the characteristics and details features of their product through Augmented Marketing. Unfortunately, in Pakistan, the country is far behind in technological advancement and needs to develop this AR advertisement marketing (Luo et al., 2011).
People reacted positively to the experience and their thoughts, which shows that this advertising medium is getting more successful and accepted by the world. According to the Diffusion of Innovation Theory (Rogers, 2003), the early adopters and the innovators were the first movers in the industries who gained influence and took first-mover advantage and benefited from the innovative technology inventions. Then Early Majority, Late Majority and Laggards come due to which competition in marketing arises and profit margin in innovation decline due to price penetration wars. This is about the first-mover advantage of the industry. The first mover invents the technology, and then it affects the behaviors and intention of the other people to adopt that new technology (Pastirmaci, 2018).
The advancement in technology has increased the need to integrate technology, but one of the most critical factors that must be considered is the acceptance of technology. Presently acceptance and use of smart innovation and modern technology is a common approach, and this has also increased acceptance of people regarding the adoption of modern technology, making it an important part of daily life. Smart innovations such as mobile phones have affected human life during the last two decades (Amin & Govilkar, 2015).
Older people face more difficulty in integrating modern technologies into their lives. To ensure the adoption of smart innovation by older people, it is imperative to evaluate the factors motivating older people to give a trial to any technological innovation and necessary to consider the barriers, which are related to the adoption of smart innovations and technologies
faced by the older people (Bower et al., 2014). On the other hand, the consumers have several options for adopting these gadgets called smart innovations in the form of tablets, smartphones, and computers, which lead to fragmentation; consequently, this way, the previous advertising approaches are considered ineffective. This availability of smart innovations does not convert the television into an obsolete instrument to telecast the advertisements at all (Hopp & Gangadharbatla, 2016). However, a country like India is a place where there is low infrastructure support and has not become an appropriate digital market so far. However, the rise of the digital world is emerging as a major medium for advertising. In addition, the number of internet users has also increased due to the literacy rate and has reached up to 164.81, as demonstrated by a survey on March 31, 2013, and among seven out of these users access the internet by mobile devices. At present, one of the major screen options is the interaction with the use of media, and overlapping consumption of mobile, radio and print media is another interesting trend (Zigmond & Stipp, 2011).

Several research studies have also indicated that media exposure time has also been increased, and most consumers watch less TV as compared to the previous times. Now customers spend most of their time on smart screens. For example, playing or using smartphones while watching television, even while advertising on TV, or surfing it on the internet has been a common trend. This is a key point to be considered by the product and service marketers. An intelligent advertiser in this regard uses web media to access the customers. Presently, marketers are considering different digital touchpoints such as television, tablets, mobile phones and personal computers to spread the shopping experience (Liao, 2014). Augmented Reality (AR) in marketing and advertising during the last several years has gained the attention of different marketers and is one of the most extensively used technology in the present time. AR technology is not a new thing, yet the ‘Augmented Reality’ was introduced by Tom Caudell at the start of the 1990s (Cassella, 2009; Martinez et al., 2014). However, the proliferation of smartphone technology has resulted in the market growth of AR.

AR is the current technology that is related to the combination of virtual content with the physical world. AR technology is experienced in diverse ways, for instance, webcams and mobiles, but sleek wearable devices or smart glasses are one emerging technology. Mobile devices are accessible to almost all people. According to a report in 2014, the number of worldwide smartphone users will increase by 2 billion by the year 2016 (eMarketer Newsroom, 2014). This has provided the fact that smartphones affect people and can be used as an opportunity by marketers to access customers and promote their services and products (Khoo,
The gap in this AR technology is that there is some limited usage of this technology and limited graphical content is there. Concerning stakeholders, there is concern that the question that arises in their minds is what would be the future. Is their investment good or not, and if it is worth it? These questions are needed to be answered (Carroll, Barnes, Scornavacca & Fletcher, 2007).

**SIGNIFICANCE OF THE STUDY**

Due to technological advancement, people want everything in their limited time. They want everything in their palm. As technology is increasing and the dynamics of the world are changing, one should remain technologically advanced not to be in competitive advantage but to remain in the market as technology has a noticeably short span of the life cycle. In the start, a technological product is expensive but slowly and gradually by the time it depreciates its value by replacing it with new technology. The study's purpose is to evaluate how much technological advancement is affecting the world and an individual’s life and how far behind one will be left if not upgraded according to the technology (Mauroner, Le & Best, 2016). Similarly, in the marketing, especially in the advertising industry, one should remain up to date with the technological advancement as traditional advertising is now a day being replaced by the digital advertising, which is more attractive compared to traditional advertising, plus it is a medium to get the attention of the target audience (Rabbi, 2012).

Traditional advertising has its own advantages and is mainly used, but one cannot ignore digital advertising as it is more effective than conventional marketing (Rauwers et al., 2018). People nowadays spend most of the time on social media, i.e., Facebook, YouTube, Twitter, etc., portraying that the digital marketing scope is increasing day by day.

The primary purpose of the study is for marketers who should remain up to date with the technological advancements so that they cannot only compete with the competitors but also want to survive in the market from a future perspective. AR is one of the newly emerging marketing tools but has a market gap that needs to be considered. Industries are using AR tools to market their products. The purpose is to study how AR technology is emerging and how much it affects an individual’s attention. (Luo et al., 2011).

**LITERATURE REVIEW**

The advertising industry has undergone significant transformation due to the revolution and automation of delivery (Goldfarb & Tucker, 2011). Technological advancements and smart innovation have introduced the world to the technological era, and marketers are now making
different changes in processes. According to the E-consultancy report (2010), the fragmentation has led to the erosion of different channels, while other channels have undergone a significant increase in audience. Thus, the significance of making interaction with the audience by marketers has become important. Audience visiting different screens is difficult, and it is complex to gain the attention of customers who have smartphones and tablets within their reach (Hines, 2013). The present-day consumers are engaged with content available across different devices, hence, posing a challenge for marketers.

Mobile advertising is considered a new industry, which is initiating to explode in different countries, including India, where millions of mobile subscribers are increasing each month. The mobile phone is a smart innovation, which is considered a convenient and great choice, especially in the case where people do not leave their homes without their phones. Presently, mobile devices are efficient enough to sense the environment as these devices have features like Bluetooth, Wi-fi, GPS, light sensors, microphones, and cameras, therefore diminishing the boundary between the digital and physical world as demonstrated by (Tirri, 2008). The invention of smartphones has resulted in technological innovation, and this is now considered augmented reality, i.e., the most interesting technology of the present time. Augmented reality has been continuing to approach provided by the internet and is based on the provision of different experiences (Perey, 2011).

In marketing, the use of AR is carried out for the attraction of advertisers as it has the potential to fascinate different consumers and therefore increase the exposure of customers to different services and products (Markets & Markets, 2011). In addition, exponential growth has also been reported in European countries and America, and various companies are now developing numerous state-of-the-art applications. Some popular AR apps are Junaio, Layar, Aurasma, and Augment, and these are free of cost; users can easily download these apps from their play stores. Moreover, these users are of different age groups, including young and older.

Malaysian Airlines was one of the companies that early adopted AR in their campaigns for advertising, and in this way, the people had the ability to scan the sky to direct the nearest airport for taking flight deals. Some other examples include F&N, Aeon, and Heineken, having several executions. However, for this purpose, users have to download a specific app of that brand. Furthermore, awareness of people may be low (Martinez et al., 2014). The Star launched its mobile app for the management of mainstream media in May 2012 (Ho, 2012), which considers iSnap for interaction with the use of the app. In addition, some local newspapers have also launched AR features, for example, the Imbas app. Many variables trigger consumer
behavior and purchase intention. Some of them are entertainment role, word of mouth, time effort, ease of use, brand name, product quality, product packaging, product advertising, product price, celebrity endorsement etc. Factors that are more considered while focusing on AR advertising and their relationships with consumer behavior and purchase intention are as follows:

**Informativeness**

Nowadays, as people have short and limited time with them, they skip those advertisements that provide incomplete information or some vague information. As time is a limiting factor, therefore, they check the details of a product with just one click. Therefore, marketers should use appropriate and complete information within a limited time to communicate their message to the target audiences (Ducoffe, 1996). Advertising is being done not only to receive its customers' attention but also to show loyalty to how its customers are. Furthermore, the customer expects to receive vague and complete information in a limited time. To overcome these types of problems, traditional advertisement and now moving towards digital advertisements (Schlosser, Shavitt, & Kanfer, 1999).

Information has a significant positive relationship with purchase intention. Customer prefers to buy those products whose advertisements are not only attractive but also provide the complete information but that product. AR can be a valuable tool for communicating information to its target audience.

**Entertainment**

Entertainment in an advertisement is a factor that customers memorize an advertisement (Teixeira et al., 2013). AR marketers should keep in mind that while making an advertisement, they should provide some element of entertainment in adds to get the target audience's attention and so that their audience memorizes those ads easily (Li, Daugherty & Biocca 2002). Therefore, it can be stated that entertainment has a significant positive impact on purchase intention.

**Credibility**

Credibility can also be defined as the reliability of the advertisement. An audience believed that the advertisement provided should be accurate and fair where no point of deceit exists (Pavlou & Stewart, 2000). Therefore, the marketer should keep in mind that once credibility is lost, the product will be adversely impacted in the market (Goldsmith et al. 2000). Good
credibility will result in purchase intention. As far as AR is concerned, the customer will adapt technology; it would have a positive impact on a customer regarding purchase intention.

**Irritation**

Irritation is considered a viable feeling that depicts displeasure and frustration and may even cause momentary impatience. In the research of Dehghani et al. (2016), irritation is defined as the extent to which the advertising message is irritating to the consumer or causing them a displeasure. One of the most widely used modes of advertising, QR codes, is known to be irritating for most users.

Several studies, such as Scholz and Smith (2016), have criticized the implementation of QR codes in the marketing strategy that irritates the consumer instead of motivating them to make purchases. It has further been noted by Perannagari and Chakrabarti (2019) that the advertising value tends to decrease if the targeted audience finds the advertisement and the call-to-action irritating. Moreover, Grubert et al. (2016) suggest that most of the irritation regarding the advertisements involving technology is based on the lack of knowledge about the benefit of its integration.

**Purchase Intention**

Intention to purchase is an indicator that shows the chances that a potential customer will be in the future a customer. The likelihood and purchase intention are directly proportional to each other’s, and it creates a positive image, quality, and other factors, etc., of a product. Therefore, marketers worked hard concerning the purchase intention of the customers. While making advertisements for a certain product, marketers need to focus on product specification, what consumers want, and all those factors acceptable to the target audiences (Singh & Pandey, 2014).

**RESEARCH FRAMEWORK**

![Research Framework Diagram](image-url)
RESEARCH HYPOTHESES

H1: Informativeness has a positive impact on Advertising Value.

H2: Entertainment has a positive impact on Advertising Value.

H3: Credibility has a positive impact on Advertising Value.

H4: Irritation has a negative impact on Advertising Value.

H5: Advertising Value has a positive impact on Purchase Intention.

H6: Advertising Value has a mediating effect between Informativeness and Purchase Intention.

H7: Advertising Value has a mediating effect between Entertainment and Purchase Intention.

H8: Advertising Value has a mediating effect between Credibility and Purchase Intention.

H9: Advertising Value has a mediating effect between Irritation and Purchase Intention.

RESEARCH METHODOLOGY

This research includes the primary data collection methods through an adapted instrument related to the research to deduce the final results of the research study. The researcher has used questionnaires to gather information from the various respondents. In this study, the researcher has used an experimental research strategy and tested the hypothesis to measure the results. The researcher has shown the augmented reality-based Ads to respondents. After showing them the Ads, the researcher has asked why they like the Ads. Based on this experiment, the results show how much respondents have liked the augmented reality Ads. In order to get authentic results as well as to achieve the objectives of the research, 380 respondents were selected as the sample size of this study. The sampling technique that has been used in this study to gather data from the respondents is unrestricted non-probability convenience sampling. For better outcomes and research results, various statistical tools are used to interpret the data. The statistical tools used in this study are the reliability analysis, exploratory factor analysis, confirmatory factor analysis, independent sample t-test and structural equation modeling. The outcomes of the analysis will determine the significance of the data as well and can be used for addressing the variables of the research.

DATA ANALYSIS
To extract authentic outcomes and results of the research, various statistical tools were used to interpret the data. The statistical tools used in this study are reliability analysis, exploratory factor analysis, confirmatory factor analysis, and structural equation modeling.

**Table 1.** Outer Loadings, Cronbach Alpha, Composite Reliability and Average Variance Extracted

| Construct              | Items   | Outer Loadings | Cronbach Alpha | Composite Reliability | Average Variance Extracted |
|-----------------------|---------|----------------|----------------|------------------------|---------------------------|
| Informativeness       | INF1    | 0.820          |                |                        |                           |
|                       | INF2    | 0.888          | 0.835          | 0.854                  | 0.726                     |
|                       | INF3    | 0.848          |                |                        |                           |
| Credibility           | CRE1    | 0.834          |                |                        |                           |
|                       | CRE2    | 0.825          | 0.726          | 0.848                  | 0.677                     |
|                       | CRE3    | 0.803          |                |                        |                           |
| Entertainment         | ENT1    | 0.742          |                |                        |                           |
|                       | ENT2    | 0.786          | 0.847          | 0.891                  | 0.792                     |
|                       | ENT3    | 0.858          |                |                        |                           |
| Irritation            | IRR1    | 0.841          |                |                        |                           |
|                       | IRR2    | 0.886          | 0.752          | 0.866                  | 0.624                     |
|                       | IRR3    | 0.859          |                |                        |                           |
| Advertising Value     | ADV1    | 0.807          |                |                        |                           |
|                       | ADV2    | 0.853          | 0.739          | 0.825                  | 0.647                     |
|                       | ADV3    | 0.823          |                |                        |                           |
| Purchase Intention    | PIN1    | 0.711          |                |                        |                           |
|                       | PIN2    | 0.701          | 0.722          | 0.837                  | 0.688                     |
|                       | PIN3    | 0.884          |                |                        |                           |

*Source: Study Analyses*

**Confirmatory Factor Analysis**

Confirmatory Factor Analysis (CFA) is used to confirm the factor structure extracted in the Exploratory Factor Analysis (EFA); Confirmatory Factor Analysis (CFA) is the next stage after EFA to decide the factor structure of data. CFA also confirms the factors structure of the data set, which determine by EFA. But here, the factor loading of “usage behavior” is slightly low, which can be fixed by applying some other techniques.

The above table shows the factor loadings of the eighteen variables on the six factors extracted. The higher the absolute value of the loading, the more the factor contributes to the variable. In the above table, six components are extracted wherein the eighteen items or variables are divided into six components according to the most important items, which similar responses in component 1 and simultaneously in components 2, 3 and so on. The factor loadings of every item in the above table are more than 0.5, which meets the desired criteria.
Reliability Analysis

The definition of reliability is the degree of agreement in two or more measures of the same construct. The standard of measuring Cronbach’s alpha is recommended by Nunnally (1967), who said that the value must be more than 0.7 to meet the criteria. As per the table above, the Cronbach alpha of each item is more than 0.7, which means that the reliability of each variable is accepted.

Table 2. Path Coefficients

| Relationship                              | Beta   | Standard Deviation | t - value | P -values | Decision |
|-------------------------------------------|--------|--------------------|-----------|-----------|----------|
| H1 Informativeness -> Advertising Value   | 0.328  | 0.047              | 6.979     | 0.000     | Accepted |
| H2 Credibility -> Advertising Value       | 0.658  | 0.051              | 12.902    | 0.000     | Accepted |
| H3 Entertainment -> Advertising Value     | 0.285  | 0.096              | 2.969     | 0.003     | Accepted |
| H4 Irritation -> Advertising Value        | -0.625 | 0.095              | -6.579    | 0.000     | Accepted |
| H5 Advertising Value -> Purchase Intention| 0.368  | 0.047              | 7.830     | 0.000     | Accepted |
| H6 Entertainment -> Advertising Value     | 0.127  | 0.033              | 3.848     | 0.000     | Accepted |
| H7 Informativeness -> Advertising Value   | 0.158  | 0.055              | 2.873     | 0.005     | Accepted |
| H8 Irritation -> Advertising Value        | -0.272 | 0.065              | -4.185    | 0.000     | Accepted |
| H9 Credibility -> Flow Experience -> Purchase Intention | 0.182  | 0.028              | 6.500     | 0.000     | Accepted |

Source: Study Analyses

The path analysis technique is used to determine the impact of independent variables on the dependent variable. The impact and the degree of impact can also be observed by this technique. According to coefficients of path analysis, all paths are significant. Informativeness, Credibility, and Entertainment positively influence, and irritation negatively influences the Advertising Value of Augmented Reality Advertisements. Similarly, Advertising value also impacts the purchase intention. The results conclude that all four major factors of the advertisement value model influence advertising value, which leads to purchase intention. In other words, if the app for AR advertisement provides Informativeness, Credibility, and Entertainment, they definitely use it, which may lead to a change in their buying behavior.

DISCUSSION AND CONCLUSION

The outcomes obtained from the analysis of information have been evaluated that AR can be considered an effective approach by different brands and marketers to interact with the customers because this technique can lead to significant two-way communication between marketers and customers. Different marketers dealing with products and services in several
categories are now focusing on the integration of AR technology in marketing, and their focus is on both the young and older potential customers. Several apps are developed to market the products and services to customers, yet resistance to adoption is a major challenge in this domain faced by marketers. Few people are resistant to the adoption of different technologies and are not much willing to integrate it into their daily lives because of the fact that they have a low capacity for the adoption of any new technology, which usually leads to techno-stress.

The marketers and advertising companies are open to accepting significant transformation in the marketing trends for the effective delivery of services and products. AR is the current technology that is related to the combination of virtual content with the physical world. AR technology is considered effective for targeting a large audience, yet the convenience and use of this technology are low compared to some other technologies. In this regard, enhancing the awareness level of older people regarding the benefits of using these sorts of technological advancements made easy for them would be effective in gaining the attention of this audience.

AR can be used as an attraction as it can increase customers’ exposure to numerous products and services. This technology is currently undergoing steady growth, but there is an increase in the number of subscribers as it is required to download the app before use, which is another limitation affecting the adoption of this technology. In addition, the low level of awareness is another reason associated with low acceptance and adoption of technology (Martinez et al., 2014). The findings of this study have explained that informativeness, entertainment, credibility, and irritation of AR advertisements significantly affect the advertising value and purchase intention.
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