



# **STUDY ON CUSTOMER BEHAVIOUR TOWARDS AUGMENTED REALITY SHOPPING ON LIFESTYLE PRODUCT.**

<sup>1</sup>Dr.N. Sridevi, <sup>2</sup>Ms.Sri Shagi,

<sup>1</sup>Associate Professor, <sup>2</sup>Student,

<sup>1</sup>School of Commerce,

<sup>1</sup>Kumaraguru College of Liberal Arts and Science, Coimbatore, India.

**Abstract:** The study aims to identify the factors that influence consumers' attitudes towards AR shopping and analyze the impact of demographic characteristics on consumer behavior towards AR shopping. Through this study, we intend to provide insights to businesses and retailers on how they can leverage AR technology to enhance the customer shopping experience and drive sales. The results of this study will be useful for businesses in understanding consumer behavior towards AR shopping, which will assist them in making informed decisions about the adoption of AR in their customer service strategies.

**Index Terms** – Shopping, Leverage, Consumer and Decision

## **1.1 INTRODUCTION OF THE STUDY:**

The concept of augmented reality (AR) in the world of shopping has emerged as a gamechanger, especially in the area of lifestyle product shopping. AR shopping involves the use of digital technology to superimpose a virtual layer of information over the real world. This technology enables customers to simulate a real shopping experience, view how products look, and interact with them in real-time, without physically being present instore. The aim of this study Is to understand how customers perceive AR shopping while purchasing lifestyle products. Lifestyle products include apparel, footwear, accessories, and beauty products, among others.

The study will explore the consumer behaviour towards AR shopping, their attitudes andbeliefs, purchasing decisions, product satisfaction, and the future potential of AR shoppingin the lifestyle product industry. The study will use a qualitative research approach, whichwill involve conducting in-depth interviews with customers who have experienced AR shopping for lifestyle products. The research will be conducted in major metropolitan citiesin India, with a focus on customers in the age group of 18-35 years, who are more predisposed towards adopting new technologies.

The findings of the study will contribute to the existing literature on AR shoppingtechnology and provide insights into customer behaviour towards this innovative shoppingmethod. Additionally, the study will be beneficial for retailers to understand customer preferences and devise effective marketing strategies to promote AR shopping. Theconcept of augmented reality (AR) shopping is gaining popularity these days. It is a new technologically advanced way of shopping, which lets consumers experience a virtual, interactive, and personalized shopping experience.

Augmented reality enhances the shopping experience, making it more engaging, convenient, and immersive. With AR shopping, consumers can visualize and customize products before making a purchase, which significantly reduces the risk of buyer's remorse. This study aims to investigate customer behaviour towards AR shopping, specifically focusing on lifestyle products. The research will explore the impact of AR on consumer buying behaviour, exploring the attitude, perception, and acceptance of consumers towards AR shopping.

The study aims to identify the factors that influence consumers' attitudes towards AR shopping and analyse the impact of demographic characteristics on consumer behaviour towards AR shopping. Through this study, we intend to provide insights to businesses and retailers on how they can leverage AR technology to enhance the customer shopping experience and drive sales.

As the results of this study will be useful for businesses in understanding consumer behaviour towards AR shopping, which will assist them in making informed decisions about the adoption of AR in their customer service strategies.

## 1.2 STATEMENT OF THE PROBLEM:

The advent of augmented reality (AR) technology has opened up new doors for online shopping. It allows customers to view life-style products like clothing, accessories, and furniture in a more immersive and realistic way before making a purchase. However, despite the growing popularity of AR shopping, little is known about the customer behaviour towards this innovation. Therefore, this study aims to investigate the following research problem on the customer behaviour towards the augmented reality on life style product.

## 1.3 OBJECTIVES OF THE STUDY:

To understand the relationship between customer behaviour and use of augmented reality technology.

To study on how the new technologies are enabling marketers to better satisfy customers.

To understand how technology has enabled marketers to effectively target customers across global.

## 1.4 SCOPE OF THE STUDY:

This study is based on how the augmented reality technologies are used in lifestyle products and it is mainly focused on the customer behaviour towards the AR platform.

## 1.5 RESEARCH METHODOLOGY:

Research methodology refers to the process and techniques used to conduct research, including the design, data collection methods, and analysis of data. It involves the systematic and structured approach for investigating and studying a topic or phenomenon, and validating and testing hypotheses or research questions. The research methodology helps to ensure that the research is reliable, valid, and accurate, and provides a framework for researchers to conduct their study.

### 1.5.1 Area of the study

The primary data sources are collected by the means of survey and the information's are collected through the google form and the forms are circulated to the people who are all under 35 years. The sample size was 100.

### 1.5.2 Source of data

A primary source of data is collected through the questionnaires and the secondary source of data are collected through the websites, research article, journal and newspaper.

### 1.5.3 Sample Size

100 respondents are used as a sample size for the study.

### 1.5.4 Sampling techniques

The sampling techniques is simple random sampling method.

## 1.6 TOOLS USED FOR ANALYSIS:

- Percentage analysis
- Chi-square analysis
- Correlation analysis

### 1.6.1 PERCENTAGE ANALYSIS:

Percentage analysis is a method of expressing a portion or a fraction of a total as percentage or a fraction of 100. It is used to analyse data, compare different sets of data, and understand trends in data. In percentage analysis, a total value is assumed to be 100%, and the proportion of each value is expressed as a percentage of the total value.

### 1.6.2 CHI-SQUARE ANALYSIS:

Chi square analysis is a statistical method used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in a data set. It helps to determine whether the observed data is significantly different from what one would expect to see by chance alone. This method is commonly used to test whether two categorical variables are independent of each other or to compare the distribution of a sample to a known population.

### 1.6.3 CORRELATION:

Correlation analysis is a statistical method used to measure the relationship between two variables. It is used to determine if there is a mutual, linear relationship between two variables, and to what extent the variables move or vary together. The correlation coefficient, which ranges from -1 to 1, indicates the strength and direction of the relationship between the two variables.

## 1.7 LIMITATION OF THE STUDY:

- The study may have a limited sample size.
- The study relies on self-reporting through surveys and questionnaires.
- Since augmented reality shopping is a relatively new area of research, there may be limited existing literature or studies to compare findings against.

## 1.8 CHAPTER SCHEME:

- Chapter I - Introduction of the study, statement of the problem, objectives of the study, scope of the study, research methodology, tools used for analysis, limitation of the study and chapter scheme.
- Chapter II - Review of literature
- Chapter III - Overview of theoretical framework of study
- Chapter IV - Data analysis and interpretation
- Chapter V – Findings, suggestions, and conclusion

### 2.1 REVIEW OF LITERATURE:

A review of literature is a critical analysis of published works on a specific topic. It involves summarizing, evaluating, and synthesizing existing research in order to identify gaps in the literature and provide insights into the topic. The purpose of a literature review is to provide a comprehensive understanding of the existing literature on a particular subject, identify areas of controversy or agreement, and identify directions for future research. The literature review is an essential part of any research project and provides a foundation for conducting research by establishing the current state of knowledge on the topic.

1. (Sandeep R. Chandu Kala, 2021) In this article, the authors outline four broad uses of the technology in retail settings. They then focus specifically on the use of AR to facilitate product evaluation prior to purchase and empirically investigate its impact on sales in online retail. Using data obtained from an international cosmetics retailer, they find that AR usage on the retailer's mobile app is associated with higher sales for brands that are less popular, products with narrower appeal, and products that are more expensive. These findings provide converging evidence that AR is most effective when product-related uncertainty is high, demonstrating the technology's potential to increase sales by reducing uncertainty and instilling purchase confidence
2. (Yadav, 2020) The concept of AR gained popularity with Snap chat but Pokémon Go took it to all together at a new level. AR is popularly growing its market from use of social media filters to surgical procedures. This is bridging the gap in virtual and real world. It's rather lies somewhere in between the real and the virtual world. This paper aims to understand influence of AR in social media for online shopping. The paper analysed the influence of the social networks, situation, product, and reference group on shoppers' intentions; and identified how Sociocultural environment work over the doubt in Augmented Reality. Survey of 100 respondents included students of different college and salaried people and indicates the 70% of the sample out of which mostly were younger generation has an influence of AR in social media and resulted that there could be some contrast drawn between online and offline consumer shopping behaviour.
3. (Fu'adi, Haryanto, Inan, & Phusavat, 2021) The rapid change in technology has turned the interaction between the customer and e-commerce application into more realistically. One of the advanced technologies in e-commerce is Augmented Reality (AR). The implementation of AR in e-commerce has been vast and diverse. One of these is to help customizing products based on customer needs. In understanding the extent of implementation for customization in AR e-commerce and its limitations, a systematic literature review was carried out from previous papers. From five paper databases whose publication dates range from 2012 to 2021, 32 papers discuss AR customization in e-commerce. The explanation of this result is divided into six research objectives, such as customer experience, behavioural response, purchase intention, adoption and acceptance, brand love, and attitude toward risk. In this paper, the explanation of customization in

AR e-commerce will be divided into the implementation and future works.

4. (PhD, 2021) This study examines the chain of effects from AR attributes on the building blocks of continuous intention to use a shopping AR app and to pay a price premium, by incorporating the roles of a customer's benefits perception, psychological inspiration and engagement via Symmetric Approach. The results support all direct hypothesised relationships among the variables, except the relationship between interactivity and utilitarian benefits, which was found to be insignificant.
5. (Bilsen Bilgili, 2019) In this study, the authors aimed to determine whether there was a difference between customers' brand trust and purchase intentions regarding real experiences of the consumers at the store, experiences about AR applications, and traditional advertisements.
6. (Shih-Chih Chen, 2022) In this era of smartphone applications, brands are actively developing applications to occupy the consumer's mobile phone space, adding many practical functions to their applications to increase brand exposure or consumer interest in the brand. Augmented reality (AR) has evolved rapidly in the past decade because of technological breakthroughs, making AR no longer an untouchable technology, but one that can be easily used on almost every phone. Therefore, this study aims to combine extended customer experience with AR marketing activities to explain and predict usage and purchase intention.
7. (Seeun Kim, 2022) This paper aims to propose a conceptual model to examine the effect of an augmented reality (AR)-based product display (vs a picture-based product display) on interactivity, vividness, website quality and consumer responses. In addition, the moderating role of the need for touch (NFT) in the effect of AR on media features is identified
8. (Raska, 2017) This thesis quantitatively addresses the research gap with an experimental method to determine the causal effect of the IKEA AR application on these customer dimensions in comparison to a product experience on the website. Generation Y has been chosen as an appropriate sample to experimentally discover effects on shopping behaviour. Finally, the shopping-oriented AR application is perceived as highly enjoyable and useful, and further evoked higher purchase intentions than its website counterpart.
9. (Katarína Valášková, 2022) In this article, we cumulate previous research findings indicating that tailored product data enhancement and targeting can lead to customer engagement through integrated machine learning predictions by leveraging personalized content. We contribute to the literature on scalable and sustainable businesses in the metaverse by showing that tailored product data enhancement and targeting can lead to customer engagement through integrated machine learning predictions by leveraging personalized content.
10. (Yoon, 2022) This study proposes a new conceptual framework that validates the relationships between three benefits (usefulness, enjoyment, and presence), two sacrifices (technicality and perceived cost), perceived value, and use-diffusion in regards to augmented reality-based mobile applications. The proposed predictive model embracing both benefit and sacrifice of adopting mobile technology offers a more balanced perspective into the adoption process, which improves upon previous methods. The result suggests a new theoretical framework useful to predict consumers' adoption of new mobile technology.
11. (Tseng-Lung Huang, 2019) The purpose of this study is to draw on self-determination and self-evaluation theories to examine the psychological factors impacted by augmented reality (AR) services, an augmented reality try-on system. This study highlights three characteristics of modality, synchronous sense of ownership and reprocess ability within an AR try-on experiences as well as the moderating effects of consumers' body surveillance and fashion consciousness.
12. (Jay Trivedi, 2022) This study focuses on the cosmetics category under online purchase. Firstly, it examines the relationship between women consumers' motivation to use AR in the mobile app, vis à vis perceived quality of augmentation on perceived value. Secondly, it also tests the relationship between perceived value and impulsive online purchase. Thirdly, it examines the mediating role of perceived value between two exogenous variables and impulsive intention of online purchase.
13. (Hsu, 2021) this study investigates how experiential AR applications (apps) influence customers' experiential value, in turn enhancing continued usage intention. The findings suggest that the features of an experiential AR app have a greater positive impact on hedonic value than utilitarian

value; in turn, only hedonic value has a positive impact on continued usage intention. The results further demonstrate that the effect of hedonic value on continued usage intention is positively moderated by perceived customer

14. (Nugroho, 2023) The Push Pull Mooring (PPM) Theory has always been linked to the issue of customer switching behaviour and the migration process. However, switching behaviour usually entails risks. PPM Theory simply describes why people move and the outcome of the migration, which regrettably ignores the risk factors arising during the process. For instance, there are risks associated with consumers switching from offline cosmetic purchases to making online purchases using Augmented Reality (AR) technology, and consumers are frequently reluctant to make purchases when there is risk involved. Many customers wonder about the performance risk of AR technology and its effectiveness.
15. (Chiu, 2021) Augmented reality retail applications (ARRAs) have emerged as rapidly developing innovative and futuristic retail innovation used in both physical store and online shops to improve the retail settings and customer experience. So, the objective of this research was to identify predictors of user benefits of ARRA in the retail food chain. By integrating the theory of information system success model, this study proposes a model to investigate the mediating effect of two values: (1) user satisfaction and (2) user continuance intention between quality perspective as explanatory variables (system, service, and information quality) and user benefits as the outcome variable.
16. (Remmerden, 2019) This study aimed at exploring the benefits of AR in comparison to a conventional product website. Therefore, an experimental study was conducted in which 60 participants tested either a product website or the same website plus the addition of an AR-feature. Afterwards, purchase intention and product evaluations were measured using a questionnaire. The insights deriving from that survey suggest that AR in fact increases a user's brand attitude, enjoyment, perceived usefulness, consumer informedness, product evaluation as well as purchase intention.
17. (Jayawardena, 2023) This paper with a systematic literature review that assesses a number of theoretical and empirical papers that utilize ELM for virtual reality and augmented reality advertisements. The second section presents research propositions that facilitate the investigation of consumer attitude persuasion through virtual reality and augmented reality advertisements. Therefore, this study provides a method to examine consumer attitudes through virtual reality and augmented reality advertisements using the social psychology theory of elaboration likelihood modelling.
18. (Yaoyuneyong, 2014) This paper proposes entertainment value, informativeness and web irritation, along with consumer innovativeness and economic motivation to shop online, as key factors influencing consumer use of VDR technology. Additionally, it is proposed that use of VDR will reduce consumers' perceived risks regarding buying apparel online and have a positive effect on consumer self-confidence, customer-brand relationships and consumers' online e-shopping behaviour.
19. (Moorhouse, 2017) This paper provides an insight into current technological innovations that are transforming the consumer experience in a myriad of ways. Then, recommendations for practitioners regarding strategic implementation of future Augmented Reality (AR) and Virtual Reality (VR) technologies are presented, followed by an overview of future implications of said technologies.
20. (Bakırılıoglu, 2022) This study, the classification of products and analysing success rate of product families' effectiveness of implementations of 3D, the concept of ecommerce, augmented reality applications' success rate for product families' effectiveness are explained. In addition, changing customer behaviours and the manufacturer's view of 3D web design have been tried to be explained with previous researches. It is planned to conduct an evaluation with a jewellery company. 3D applications increase their value in the virtual world day by day.
21. (Jayananda, Seneviratne, Abeygunawardhana, Dodampege, & Lakshani, 2019) Augmented reality (AR) applications have recently become popular on modern smartphones. We explore the effectiveness of this mobile AR technology in the context of grocery shopping, in particular as a

means to assist shoppers in navigating to the desired products and making healthier and beneficial decisions as they decide which grocery products to buy and even do shopping while staying at home. A supermarket is a customer base premises; means the customer is the one who decides what he is going to purchase and the customer satisfaction may be crucial. In-house shopping in supermarkets has earned popularity among majority of the customers and at the same time most of the customers looking for remote shopping which they can do get the shopping experience just sitting at home. Shopping malls has combined with the IT industry and create more innovative and creative apps, which are beneficial for both the customer and seller parties. So, the main objective of this work is to design a fullyfunctional mobile application that has an innovative positioning and navigation systemusing AR core technology and Augmented Reality. The other major parts of this application are customer base shopping list handling, personalized recommendations by object detection using AR and remote shopping. Overall, the scope of study involvesresearch on AR core technology, Augmented Reality and other additional technologies.

22. (BULLETIN, 2020) This study focuses on the impact or difference fabricated with theusage of Augmented Reality by the product organizations. The study also identifies and addresses the expectation gap generated by the advent of Augmented Reality and recommends future scope.

23. (Crowell, 2022)In this research, previous findings were cumulated showing that changing consumer demands during purchase journeys can be optimized through visual analytics, messaging tools, natural language processing technologies, and realtime inter- operable networks, and I contribute to the literature by indicating that purchase intentions, customer behaviour, immersive virtual experiences, and online retail spending on livestreaming shopping platforms can be assessed by data visualizations, voice biometrics, augmented analytics, and search engine algorithms. Throughout March 2022, a quantitative literature review of the Web of Science, Scopus, and ProQuest databases was performed, with search terms including “metaverse”, “augmented analytics tools,” “interconnected decision-makingprocesses,” and “computer vision algorithms.”

24. (Vandith Pamuru, 2021) Pokémon Go, a mobile game that utilizes augmented reality (AR) technology, garnered tremendous public interest upon release with an average of 20 million active daily users. The game combines geospatial elements with gamification practices to incentivize user movement in the physical world. In this study, we examine the potential externalities that such incentives may have on associated businesses. Particularly, we study the impact of Pokémon Go on local restaurants by using online reviews as a proxy for consumer engagement and perception. We treat the release of Pokémon Go as a natural experiment and study thepost release impact on associated restaurants. We find that restaurants associated with Pokémon Go do indeed enjoy a higher level of consumer engagement and more positive consumer perception. In addition, we find that the characteristics of a restaurant moderate these effects significantly. To the best of our knowledge, our studyis the first to examine the economic implications of augmented-reality applications. Therefore, our research lays the foundation for future studies to examine how augmented-reality applications affect consumer economic behaviour. Our study also provides insights for business owners and policymakers regarding the potential value of being associated with AR-based applications.

25. (Bakırlioglu, 2022) In this digitalization age, smart technologies are on the cusp of changing all business sector including retailing. Today's consumers desire to shop in a smart store where the physical products on display are connected to the internet world.This study aims to propose a model for investigating Generation Z (Gen-Z) consumers' expectations towards the smart retail technology (SRT) in the Malaysian context through the application of the stimulus-organism-response framework.

26. (Groß, 2015) This paper is to classify and organize the accumulated knowledge aboutmobile shopping (m-shopping) as revealed in the present literature regarding retail. A classification framework has been applied, consisting of three categories: onlinedistribution channels, advanced technology for in-store shopping, and technology perspectives.

27. (Inan, 2022) Augmented reality technology is accepted in different fields today. Marketing is one of the areas where this new generation technology is widely used. This technology, which enables customers to gain experience between the virtual worldand the real world, regardless of

time and place, in order to ensure sustainable purchasing behaviour, should be considered as a gateway to the changing world of marketing. In addition to its use in the fields of augmented reality, health, defence, education, engineering, architecture, media, it has also been effective in the acceptance of institutions/organizations, brands, and social media by wider customers/users. Provided that this technology is implemented in all marketing strategies, it contributes to gaining competitive advantage in the market.

28. (Javornik, 2016) in her study investigating two augmented reality applications and consumer reactions against media features, firstly investigated the role of AR technology and consumer interaction, and then evaluated the measurement elements of perceived magnification in increasing AR applications as a prominent media feature. Interaction on brand websites; evaluated in the context of consumers' cognitive, affective and behavioural responses explained by their online streaming experiences, and stated that the perceived augmentation represents a suitable concept for understanding consumer responses to AR features, while the increase mediates consumers' emotional responses and behavioural intentions.
  
29. (Yaoyuneyong, 2016) their study on augmented reality marketing, examined consumer preferences and attitudes towards hypermedia print ads. In their study, they determined eight different parameters to compare consumer attitudes and preferences with three different advertising formats. These; attitude towards advertising, informativeness, entertainment, discomfort, advertising value, time-labour, innovation and advertising effectiveness. The ad formats compared are traditional print ad, quick response code (QR) hypermedia print ad (QRH), and augmented reality print ad (ARH). In the study, they concluded that ARH print advertising is effective on consumer attitudes and preferences and creates a perception of more information, innovation and effectiveness.
  
30. (Thamizharasu, 2020) A review of analysis and researches about online shopping trust among youths in India to examine the e-commerce business gaining the confidence of highest population segment is attempted in this paper. India has the highest number of internet users and became the second-largest base in the world.
  
31. (Zhang, Zhu, Wang, Reng, & Yan, 2022) The purpose of this paper is to provide a literature review of the furniture online consumption with an aim to extend the concept of consumer experience to the context of online furniture consumption. The paper offers three important contributions for both academics and practitioners. First, it analyses the main influencing factors of the consumer experience concerning wood furniture online consumption in China. And secondly, it proposes a conceptual framework of furniture online consumer experience (FOCE), which divides online consumption experience into three dimensions: perceived risk experience, emotional experience, and new technology interactive experience. Finally, from a managerial perspective, the authors put forward constructive strategies in terms of furniture online sales. The findings of this study afford practical implications for the improvement of the online shopping experience of consumers for furniture companies.
  
32. (Dai-In Danny Han, 2020) This study discusses elements affecting the visitor experience and discusses how AR and VR should be designed to contribute to enhancing the experience and making it memorable from a theoretical perspective. Further research recommendations are outlined that suggest the use of complementing research methodologies to better understand the nature of experiences in order to design AR and VR application more purpose-specifically.

### **3.THEORITICAL OVERVIEW:**

#### **3.1 AUGMENTED REALITY:**

Augmented reality technology is a technology that allows computer-generated sensory information, such as graphics, sounds, and haptic feedback, to be superimposed on real-world environments. It enhances a person's perception of reality by adding virtual objects to their view of the physical world, and allowing them to interact with these objects in real-time. This technology is used in a range of applications, from

entertainment and gaming to education, marketing, and healthcare.

### 3.2 HISTORY:

Augmented reality (AR) has a rich history dating back several decades. Here is a brief timeline of the major milestones in the history of AR. 1968, Ivan Sutherland, a computer scientist, invents the first head-mounted display system which allowed the wearer to see virtual objects superimposed onto the real world. 1992, Tom Caudell and David Mizell, two Boeing

researchers, coin the term “augmented reality” to refer to a system that overlays computer-generated graphics onto a user’s view of the real world. 1999, Hirokazu Kato, a researcher at Hiroshima City University, creates AR Toolkit, an open-source software library for building AR applications. 2008, The release of the first-generation iPhone introduces gyroscopes and accelerometers, which can be used for motion tracking and improving AR experiences. 2012, Google unveils Google Glass, a wearable AR device that displays information in a small screen above the user’s right eye. 2016, PokéMon Go, an AR mobile game, becomes an overnight sensation and introduces millions of people to the concept of AR. 2017, Apple releases ARKit, a software development kit for building AR applications on iOS devices. 2020: The COVID-19 pandemic leads to a surge in demand for AR applications, particularly in industries such as retail and healthcare. Today, AR continues to grow in popularity and is being used in a wide range of industries, from education and entertainment to manufacturing and construction.

### 3.3 ADVANTAGE OF AUGMENTED REALITY:

**Better User Experience:** AR enhances the user’s experience by providing them with additional data, animations, or audio in real-time, making the experience more interactive and immersive.

**Improved Learning and Training:** AR provides a practical learning experience that can help users learn by seeing and doing rather than reading or watching.

**Increased Safety:** AR can enhance safety by providing users with a virtual, hands-on training experience that can help them understand real-world situations without risking harm.

**Enhanced Marketing and Sales:** AR can be used to provide consumers with additional information about a product or service, which can help increase sales or create brand loyalty.

### 3.4 DISADVANTAGES OF AUGMENTED REALITY:

**Technical Requirements:** AR requires high-end hardware and software that can be expensive and may require frequent updates to ensure optimal performance.

**Limited Interoperability:** AR technology is still in its early stages, and there are currently limited standards in place for developing and deploying AR applications.

**Security and Privacy Issues:** AR applications can collect user data, which raises concerns about data security and privacy.

**Potential Addiction:** As with any technology, the use of AR could lead to addiction, causing users to spend excessive amounts of time using the technology, which could impact their productivity and well-being.

### 3.5 FEATURES OF AUGMENTED REALITY:

Some features of augmented reality are:

**Real-time interaction** - Augmented reality allows for real-time and instant interaction with digital content and the physical world.

**3D visualization** – Augmented reality technology often uses 3D models to bring real objects to life or add virtual objects to a real environment.

**Gesture recognition** – Augmented reality technology can be designed to recognize different types of hand gestures or movements, allowing for more intuitive and immersive experiences.

**Object recognition** - Augmented reality technology can recognize objects in the real world and overlay digital content onto them, creating a more realistic and enjoyable AR experience.

**Location detection** - Augmented reality technology can detect the user's location and use this information to provide customized AR experiences.

**Multi-platform integration** - Augmented reality technology can be integrated into various devices, including smartphones, tablets, and wearable technology, providing a seamless user experience across multiple platforms.

**Simultaneous usage** - Augmented reality technology can allow multiple users to engage with the same virtual objects in real-time, creating a collaborative experience.

**Immersive sound** - Augmented reality technology can also add immersive sound effects to create a more realistic and engaging user experience.

### 3.6 USES OF AUGMENTED REALITY

**Education** – AR can be a fantastic educational tool, allowing students to interact with and explore a 3D learning environment.

**Gaming** – AR has become very popular in the gaming industry, allowing players to fully immerse themselves in the game world.

**Retail** – Retailers can use AR to create a more engaging shopping experience, allowing customers to visualize products in their own environment before purchasing.

**Tourism** – AR can enhance the tourist experience by providing virtual tours and interactive, informative guides.

**Healthcare** – AR technology can be used to simulate medical procedures, allowing healthcare professionals to practice before performing on a patient.

**Marketing** – AR allows marketers to create unique and interactive campaigns that engage customers on a whole new level.

**Navigation** – AR can be used for indoor and outdoor navigation, making it easier to find your way around unfamiliar places.

**Interior Design** – AR can be used to visualize furniture and room layouts, allowing users to see how their new decor will look before making a purchase.

**Construction** – AR can be used to visualize building plans and designs, making it easier to communicate the intended final product.

**Manufacturing** – AR can be used to assist workers on assembly lines, providing guidance on which parts to use and where they should be placed.

### 3.7 LIFE STYLE PRODUCT -MEANING

A lifestyle product is a type of product that is specifically designed to complement or enhance a particular lifestyle. It may include items such as clothing, home decor, gadgets, fitness equipment or any other products that are designed to fit into a particular lifestyle. These products are marketed towards customers who adopt a particular lifestyle, or who aspire to do so. The aim of lifestyle products is to help people create a sense of identity, express their personal style or achieve certain health goals, by using products that fit into their lifestyle.

### 3.8 USES OF LIFE STYLE PRODUCT:

**Personal hygiene and grooming** - products like skincare, hair care, and dental care fall under this category and are used for maintaining personal hygiene and grooming.

**Fitness and wellness** - lifestyle products like workout equipment, fitness trackers, and healthy food options are used to maintain physical fitness and overall wellness.

**Travel and adventure** - products like backpacks, camping gear, and travel accessories are used by people who love adventure and exploration.

**Home decor and furnishing** - products like wall art, stylish furniture, and decorative elements are used to enhance the aesthetic appeal of living spaces.

**Entertainment and leisure** - products like books, movies, video games, and musical instruments are used for leisure time entertainment.

**Fashion and accessories** - products like trendy clothing, jewellery, bags, and shoes are used to create a fashionable image and express one's personal style.

**Technology and gadgets** - products like smartphones, laptops, and smart home appliances are used for convenience, entertainment, and connectivity.

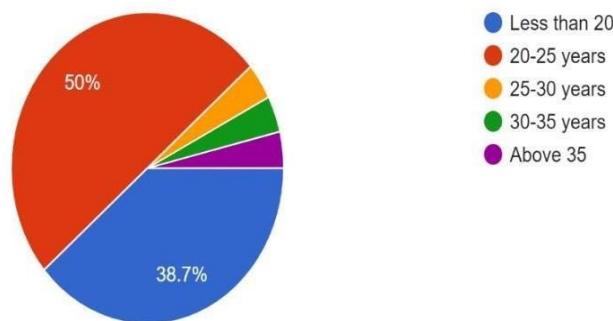
#### 4.1 PERCENTAGE ANALYSIS:

**TABLE NO 4.1.1**

**Table showing the Age of Respondents**

Age	No of Respondents	Percentage
Less than 20	41	38.7%
20-25 years	53	50.0%
25-30 years	4	3.8%
30-35 years	4	3.8%
Above 35	4	3.8%
Total	106	100

**SOURCE: PRIMARY DATA**

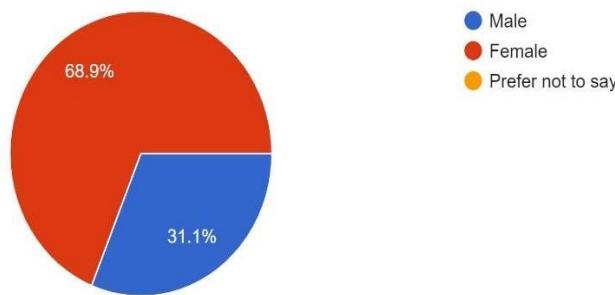
**CHART4.1.1****Chart showing the age of respondents****INTERPERTATION:**

In the above table the age of respondents interprets that, the age group from less than 20 years shows the 38.7percentage and the age group between 20-25 shows the 50 percentage and all other age groups are shown same percentage as 3.8 percentage.

**TABLE NO 4.1.2****Table showing the gender of respondents**

Gender	No of respondents	Percentage
Male	33	68.9%
Female	73	31.1%
Total	106	100%

**SOURCE: PRIMARY DATA**

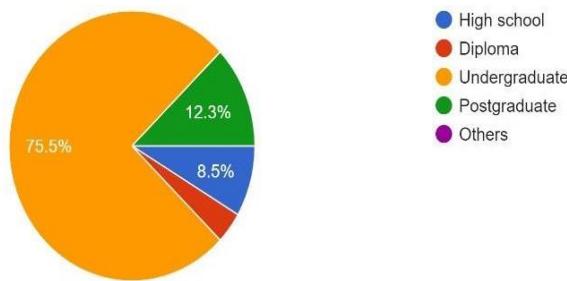
**CHART 4.1.2****Chart showing the age of respondents****INTERPERTATION:**

The table shows that 68.9% of female respondents and 31.1% of respondents from male.

**TABLE NO 4.1.3****Table showing the Education qualification**

Education qualification	No of respondents	Percentage
High school	9	8.5%
Diploma	4	3.7%
Undergraduate	80	75.5%
Postgraduate	13	12.3%
Total	106	100%

SOURCE: PRIMARY DATA

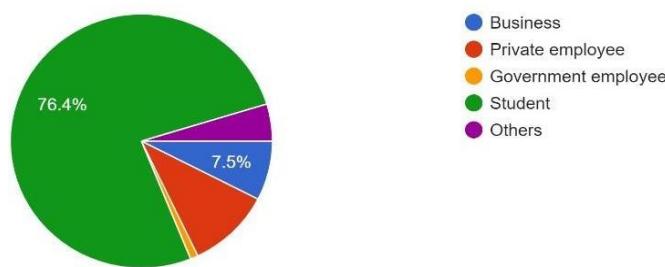
**CHART 4.1.3****Chart showing the Education qualification****INTERPERTATION:**

The above table represents that 75% are undergraduate and remaining are below to high school, postgraduate and diploma with the percentage of 8.5%, 12.3% and 3.8%.

**TABLE NO 4.1.4****Table showing the Occupation**

Occupation	No of respondents	Percentage
Business	8	7.5%
Private employee	11	10.5%
Employee Government	1	0.9%
Student	81	76.4%
Others	5	4.7%
<b>Total</b>	<b>106</b>	<b>100%</b>

**SOURCE: PRIMARY DATA**

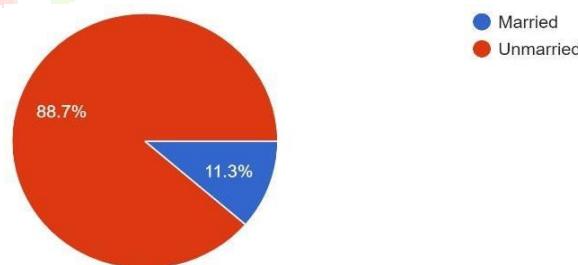
**CHART 4.1.4****Chart showing the Occupation****INTERPERTATION:**

The above table shows that 76.4% of student are mostly engaged in augmented reality and remaining are not much interested in augmented reality that is shown as percentage form 10.4%, 7.55% and 4.7%.

**TABLE NO 4.1.5****Table showing the Marital status**

Marital status	No of respondents	Percentage
Married	12	90%
Unmarried	94	10%
Total	106	100%

SOURCE: PRIMARY DATA

**CHART 4.1.5****Chart showing the Marital status****INTERPERTATION:**

The table shows that 88.7% are unmarried and 11.3% are married.

**TABLE NO 4.1.6**

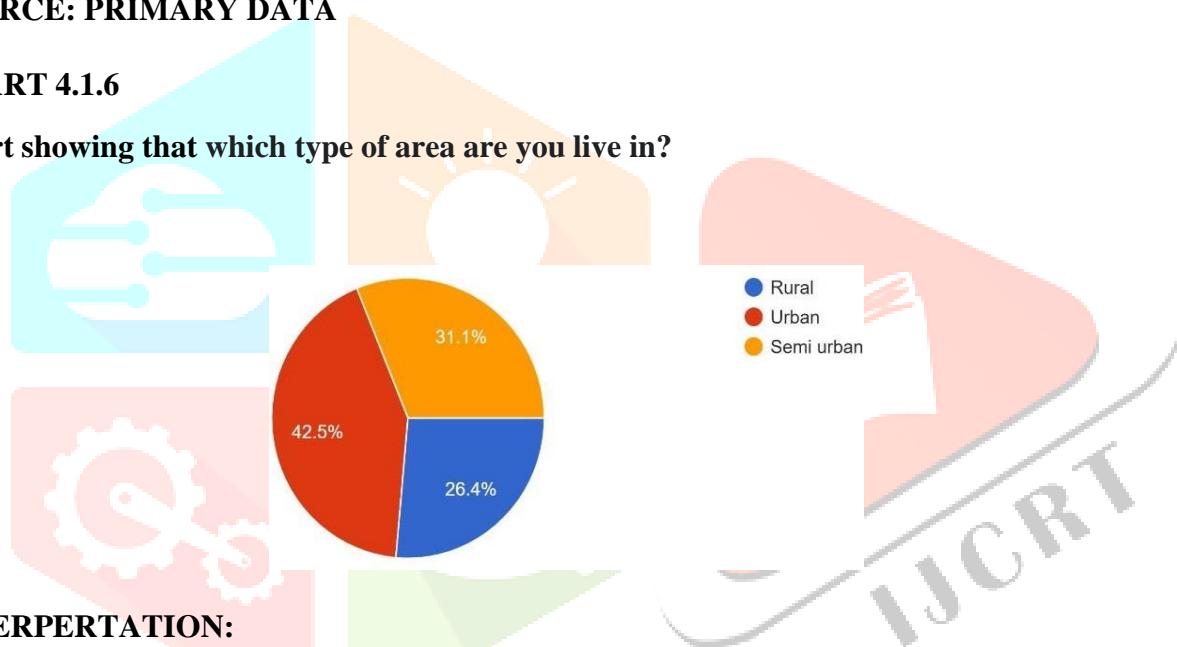
Table showing that which type of area are you live in?

Type of area	No of respondents	Percentage
Rural	28	42.5%
Urban	45	26.4%
Semi urban	33	31.1%
Total	106	100%

**SOURCE: PRIMARY DATA**

**CHART 4.1.6**

Chart showing that which type of area are you live in?

**INTERPERTATION:**

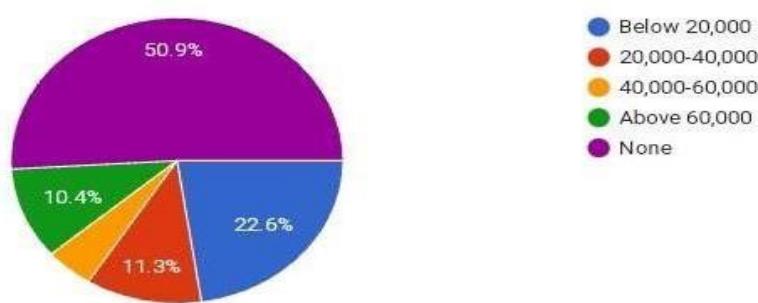
The above table shows that 26.4% of people are in rural area ,42.5% are from urbanarea and 31.1% of the people are in semi urban area.

**TABLE 4.1.7**

Table showing monthly income of respondents

Monthly income	No. of respondents	Percentage
Below 20000	24	22.6%
20000-40000	12	11.3%
40000-60000	5	4.7%
Above 60000	11	10.4%
None	54	50.9%
Total	106	100%

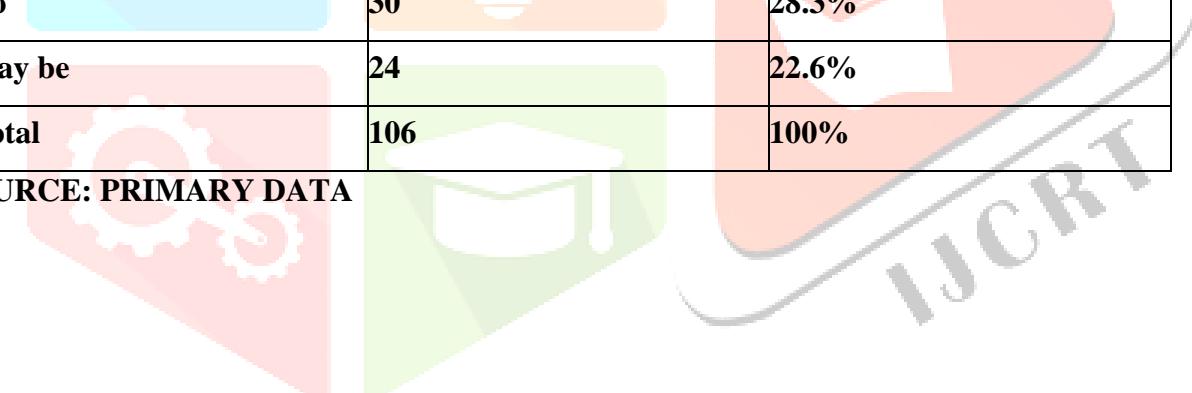
**SOURCE: PRIMARY DATA**

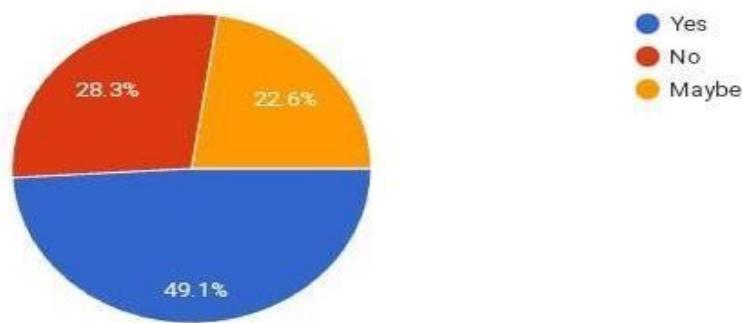
**CHART 4.1.7****Chart showing monthly income of the respondents****INTERPRETATION:**

The above table shows that 50.9% of the persons are not earning the income and all others incomes are 10.4%, 11.3% and 22.6%.

**TABLE 4.1.8****Table showing awareness of augmented reality**

Are they aware	No. of respondents	Percentage
Yes	52	49.1%
No	30	28.3%
May be	24	22.6%
Total	106	100%

**SOURCE: PRIMARY DATA**

**CHART 4.1.8****Chart showing awareness of augmented reality****INTERPRETATION:**

The table shows that 49.1% are aware of augmented reality and 28.3% of the people are don't know about the augmented reality and 22.6% of peoples are partially know about the technology

**TABLE 4.1.9****Table showing does they shop online**

Do online shopping	No. of respondents	Percentage
Yes	96	90.6
No	5	4.4
May be	5	5
Total	106	100

SOURCE: PRIMARY DATA

**CHART 4.1.9****Chart showing does they shop online****INTERPRETATION:**

The above table shows that 90.6% of people are shop online and remaining 4.7% are not much interested about the shopping online

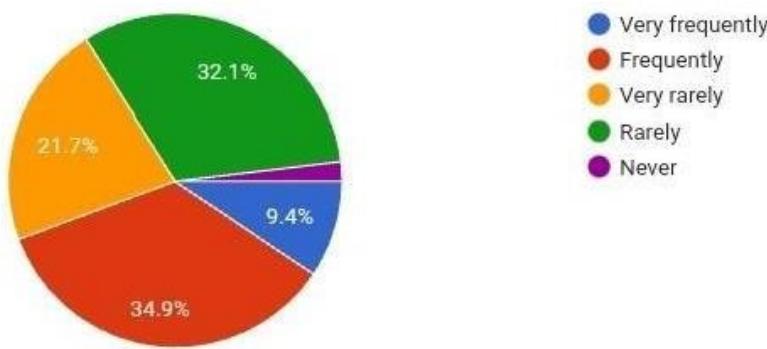
**TABLE 4.1.10****Table showing how frequently they use augmented reality while shopping for lifestyle product**

Frequency	No. of respondents	Percentage
Very frequently	10	9.45%
Frequently	37	34.9%
Very rarely	23	21.7%
Rarely	34	32.1%
Never	2	1.9%
<b>Total</b>	<b>106</b>	<b>100%</b>

SOURCE: PRIMARY DATA

**CHART 4.1.10**

**Chart showing how frequently they use augmented Reality while shopping for lifestyle product**

**INTERPRETATION:**

The above table shows that very frequently as 9.5%, frequently 34.9%, very rarely 21.7%, rarely 32.1% and never 1.9%

**TABLE 4.1.11**

**Table showing how likely are recommend augmented reality shopping**

Likely recommend	No. of respondents	Percentage
Very likely	11	10.4%
Likely	34	32.1%
Neutral	58	54.7%
Unlikely	3	2.8%
Very unlikely	0	0
Total	106	100

SOURCE: PRIMARY DATA

**CHART 4.1.11**

**Chart showing how likely are recommend augmented reality shopping**

**INTERPRETATION**

The above table shows that very likely as 10.4%, likely as 32.1%, neutral as 54.7% and unlikely as 2.8%.

**TABLE 4.1.12**

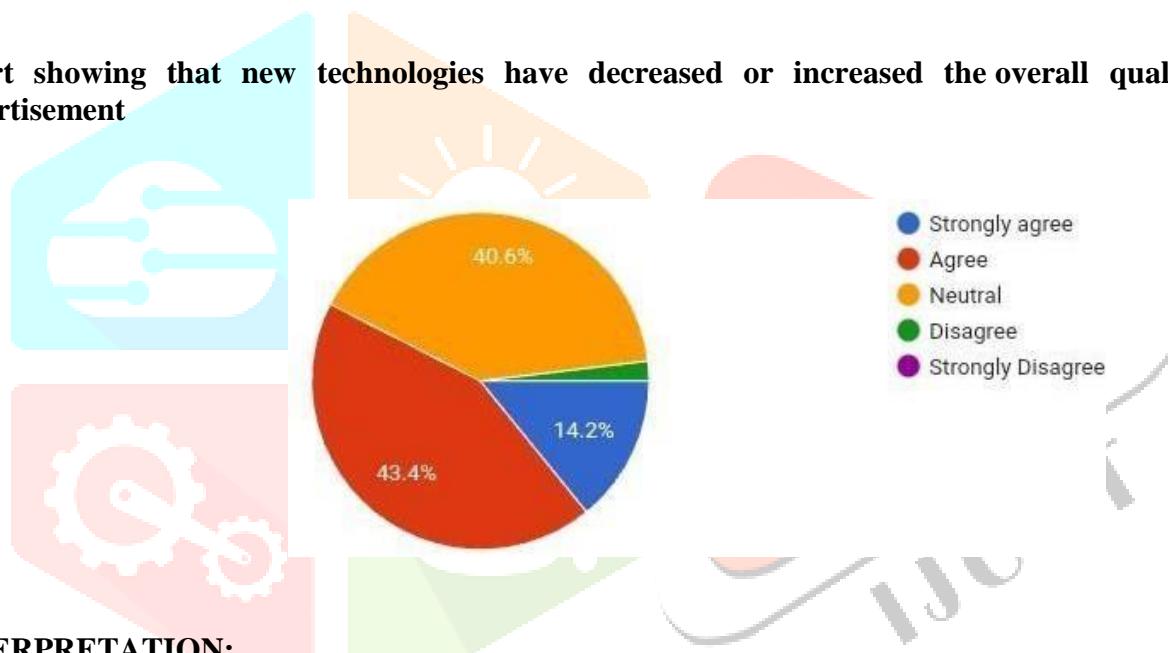
Table showing new technologies have decreased or increased the overall quality of advertisement

	No. of respondents	Percentage
Strongly agree	15	14.2
Agree	46	43.4
Neutral	43	40.6
Disagree	2	1.9%
Strongly disagree	0	0
Total	106	100%

SOURCE: PRIMARY DATA

**CHART 4.1.12**

Chart showing that new technologies have decreased or increased the overall quality of advertisement



#### INTERPRETATION:

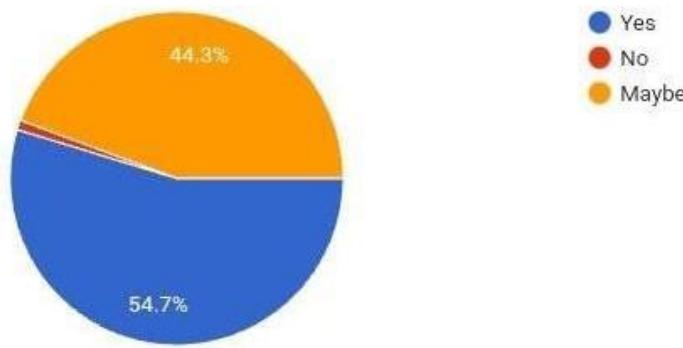
The above table shows that strongly agree as 14.2%, agree as 43.4%, neutral as 40.6% and disagree as 1.9%.

**TABLE 4.1.13**

Table showing how augmented shopping become popular in future

	No. of respondents	Percentage
Yes	58	54.7%
No	1	0.9%
May be	47	44.3%
Total	106	100

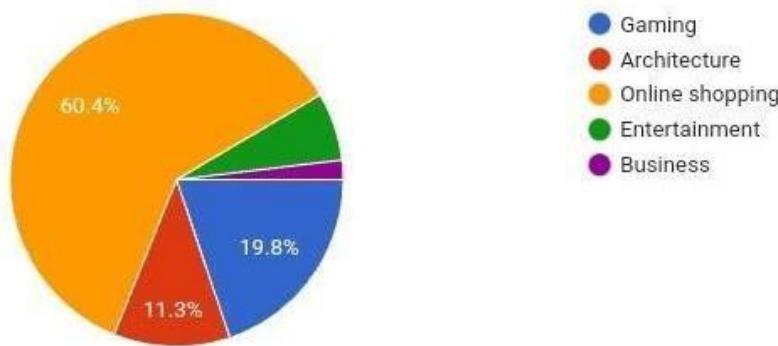
SOURCE: PRIMARY DATA

**CHART 4.1.13****Chart showing how augmented shopping become popular in future****INTERPRETATION**

The above table shows that 54.7% are accepting that they will be future for augmented reality, most of the people are saying as maybe 44.3% and very less people are saying as no 0.9%.

**TABLE 4.1.14****Table showing platform that noticed the augmented reality**

Platform	No. of respondents	Percentage
Gaming	21	19.8
Architecture	12	11.3
Online shopping	64	60.4
Entertainment	7	6.6%
Business	2	1.9%
Total	106	100%

**SOURCE: PRIMARY DATA****CHART 4.1.14****Chart showing platform that noticed the augment reality****INTERPRETATION:**

The above table shows that 60.4% of the people are notice the augmented reality on onlineshopping and 19.8% of the persons are noticed in gaming.

**TABLE 4.1.15**

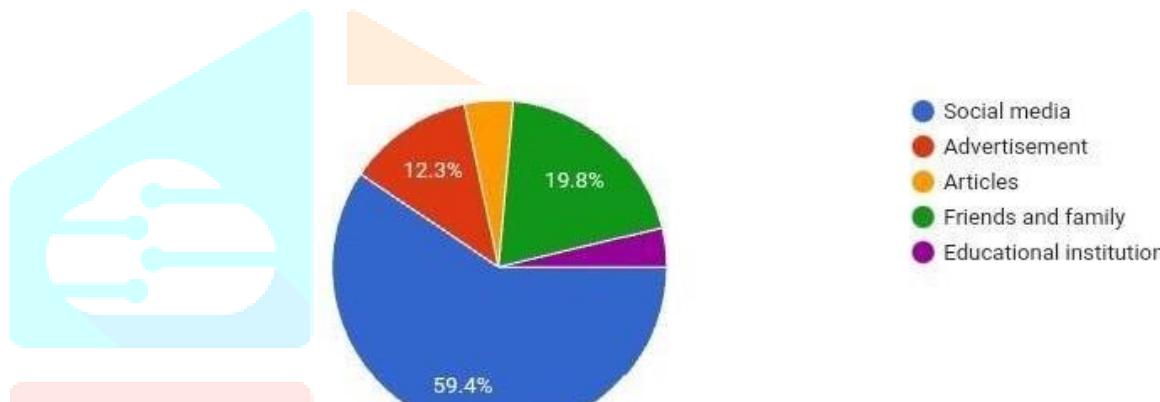
Table showing which platform shows about augmented

	No. of respondents	Percentage
Social media	63	59.4%
Advertisement	13	12.3%
Articles	5	4.7%
Friends and family	21	19.8%
Educational institution	4	3.8%
Total	106	100%

SOURCE: PRIMARY DATA

**CHART 4.1.15**

Chart showing that reality which platform shows about augmented



### INTERPRETATION

The above table shows that 59.4% of people are know about the augmented reality in socialmedia.

**TABLE 4.1.16**

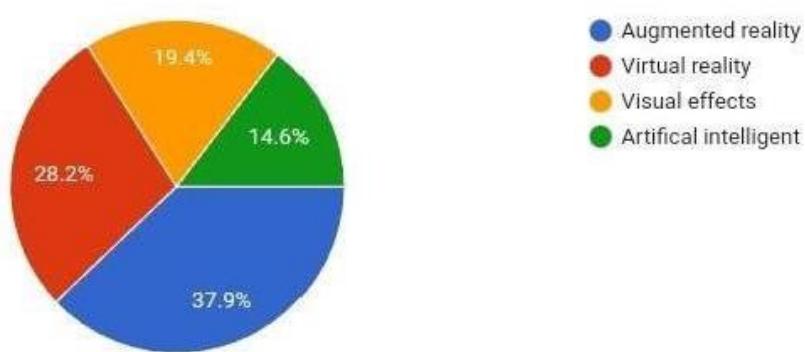
Table showing aware of the new technologies

	No. of respondents	Percentage
Augmented reality	39	37.9%
Virtual	29	28.2%
Visual effects	20	19.4%
Artificial intelligence	15	14.6%
Total	103	100%

SOURCE: PRIMARY DATA

**CHART 4.1.16**

Chart showing that aware of the new technologies

**INTERPRETATION:**

The above table shows that 37.9% as augmented reality, 28.2% as virtual rality, 19.4% as visualeffects and 14.6% as artificial intelligent.

**4.2 CHI-SQUARE TEST:****4.2.1 Occupation \* The device they are prefer for augmented reality Crosstabulation**

		1	2	3	4	5
Occupation	1	Count	1	4	1	0
	2	Expected Count	.1	1.3	3.8	.5
3	Count	1	4	5	0	0
	4	Expected Count	.2	2.1	6.3	.8
4	Count	0	1	0	0	0
	5	Expected Count	.0	.2	.6	.1
Total	Count	1	14	49	7	5
	2	Expected Count	1.6	16.3	48.1	6.2
	Count	0	1	4	0	0
	3	Expected Count	.1	1.1	3.2	.4
	Count	2	21	62	8	5
	4	Expected Count	2.0	21.0	62.0	8.0

TABLE 4.2.1

**Occupation \* The device they are prefer for augmented reality**

	Value	Df	Asymptotic Significance (2sided)
Pearson Chi-square	12.972 <sup>a</sup>	16	.675
Likelihood Ratio	12.957	16	.676
Linear-by-Linear Association	1.783	1	.182
N of Valid Cases	98		

SOURCE: CALCULATED DATA

**HYPOTHESIS 1**

HO: There is no significant relationship between occupation and which device they are prefer for experiencing augmented reality.

H1: There is significant relation between occupation and which device they are prefer for experiencing augmented reality.

**INTERPERTATION:**

In the above analysis, we can see that P value is 0.675. Under persons chi square test, the value of P should be less than 5% level of significance or less than 0.05. Here the P value is more than 5% level of significant. Hence the null hypothesis (HO) is accepted. Thus, it can be concluded that there is no significant relationship between occupation and which device they are prefer for experiencing augmented reality.

**4.2.2 Monthly income \*Augmented reality shopping for lifestyle product Crosstabulation**

			1	2	3	
Monthly income	1	Count	4	6	6	
		Expected Count	2.3	7.4	5.1	
	2	Count	1	3	0	
		Expected Count	1.0	3.2	2.2	
	3	Count	0	2	1	
		Expected Count	.3	1.0	.7	
	4	Count	1	4	1	
		Expected Count	1.1	3.6	2.4	
	5	Count	4	17	14	
		Expected Count	5.3	16.8	11.6	
Total		Count	10	32	22	
		Expected Count	10.0	32.0	22.0	

**Monthly income \* Augmented reality shopping for lifestyle product**

	Value	Df	Asymptotic Significance (2sided)
Pearson Chi-square	12.981 <sup>a</sup>	16	.674
Likelihood Ratio	16.581	16	.413
Linear-by-Linear Association	.247	1	.619
N of Valid Cases	99		

SOURCE: CALCULATED DATA

## HYPOTHESIS 2

HO: There is no significant relationship between monthly income and how frequently they are using augmented reality while shopping for lifestyle product.  
H1: There is significant relation between monthly income and how frequently they are using augmented reality while shopping for lifestyle product.

### INTERPRETATION:

In the above analysis, we can see that P value is 0.674. Under persons chi square test, the value of P should be less than 5% level of significance or less than 0.05. Here the P value is more than 5% level of significant. Hence the null hypothesis (HO) is accepted. Thus, it can be concluded that there is no significant relationship between occupation and which device they are prefer for experiencing augmented reality.

### 4.2. Area of living \* Challenges Crosstabulation

			1	2	3
Which type of area are you live in?	1	Count	11	6	2
		Expected Count	7.9	6.8	5.7
		Count	7	14	11
	2	Expected Count	12.0	10.4	8.7
		Count	11	5	8
	3	Expected Count	9.1	7.8	6.6
Total		Count	29	25	21
		Expected Count	29.0	25.0	21.0

#### 4.2.3 TABLE Area of living \* Challenges

	Value	Df	Asymptotic Significance (2sided)
Pearson Chi-square	10.042 <sup>a</sup>	8	.262
Likelihood Ratio	11.010	8	.201
Linear-by-Linear Association	.026	1	.871
N of Valid Cases	99		

SOURCE: CALCULATED DATA

#### HYPOTHESIS 3

HO: There is no significant relationship between monthly income and how frequently they are using augmented reality while shopping for lifestyle product.  
H1: There is significant relation between monthly income and how frequently they are using augmented reality while shopping for lifestyle product.

#### INTERPERTATION:

In the above analysis, we can see that P value is 0.262 Under persons chi square test, the value of P should be less than 5% level of significance or less than 0.05. Here the P value is more than 5% level of significant. Hence the null hypothesis (HO) is accepted. Thus, it can be concluded that there is no significant relationship between occupation and which device they are prefer for experiencing augmented reality.

#### 4.3 CORRELATION:

TABLE 4.3.1

#### Education qualification\* Awareness of new technologies

		Education qualification	Are you aware of any new technologies that are being used by marketers in order to better satisfy consumers? If so, which one have you heard of?
Education qualification	Pearson Correlation	1	-.059
	Sig. (1-tailed)		.283
	N	99	96
Are you aware of any new technologies that are being used by marketers in order to better satisfy consumers? If so, which one have you heard of?	Pearson Correlation	-.059	1
	Sig. (1-tailed)	.283	
	N	96	96

**SOURCE: CALCULATED DATA****INTERPERTATION:**

The correlation coefficient close to plus -1 means it is a negative relationship between the two variables with an increase in one of the variables being associated with a decrease in the other variable. Here the correlation analysis shows that the statistically significant positive correlation between education qualification and aware of the new technologies. The Pearson correlation coefficient for these variables is (-.059) with a P value of (.283). This analysis suggests that as the education qualification increases, the awareness of the new technology also decreases. The correlation coefficient of (-.059) indicates a moderate negative correlation between the education qualification and awareness of the new technology. This means that as an education qualification increases, the awareness of the new technology will decrease. Therefore, the correlation shows the negative relationship.

**TABLE 4.3.2****Age of respondents\* Do you shop online**

		Age of respondents	Do you shop online?
Age of respondents	Pearson Correlation	1	-.016
	Sig. (2-tailed)		.874
	N	99	99
Do you shop online?	Pearson Correlation	-.016	1
	Sig. (2-tailed)	.874	
	N	99	99

**SOURCE: CALCULATED DATA****INTERPERTATION:**

The correlation coefficient close to -1 means it is a negative relationship between the two variables with an increase in one of the variables being associated with a decrease in the other variable. Here the correlation analysis shows that the statistically significant negative correlation between education qualification and aware of the new technologies. The Pearson correlation coefficient for these variables is (-.016) with a P-value of (.874). This analysis suggests that as the age and shopping online also decrease. The correlation coefficient of (-.016) indicates a moderate negative correlation between the age and shopping online. This means that as an age increases, shopping online will decrease. Therefore, the correlation shows the negative relationship.

## 5.FINDINGS, SUGGESTIONS AND CONCLUSION:

### 5.1 FINDINGS:

The study on augmented reality can be a useful tool for various applications that can transform how people interact with technology in daily life and further study on analysis using the percentage analysis, chi-square and correlation.

- Majority of the respondents are belonging to the age group of less than 20 years (50%) and 20-25 years (38.7%)
- Majority of the respondents are female (70%)
- Majority of the respondents are belonging to the undergraduate (80%)
- Majority of the respondents are from student (81%)
- Majority of the respondents are unmarried (94%)
- Majority of the respondents are shop online (90.6%)
- Majority of the respondents are used augmented reality shopping for clothing (74.5%)
- Majority of the respondents are frequently purchasing through the augmented reality (34.9%)
- Majority of the respondents are shows that the augmented reality shopping will become a more popular in future (54.7%)
- Majority of the respondents are noticed this technology in online shopping (60.4%)
- Majority of the respondents are got to know about the augmented reality technology through the social media (59.4%)
- Majority of the respondents are lives in urban area (45%)
- Majority of the respondents shows that monthly income is none (50.9%) and below 20000 (22.6%)
- Majority of the respondents are heard about the augmented reality (49.1%)
- Majority of the respondents are preferring to experiencing augmented reality through smartphones (83%)
- There is no relationship between the occupation and the device they are prefer for experiencing augmented reality
- There is no relationship between the monthly income and how frequently they are shopping for life style product
- There is no relationship between the type of area and challenges they are facing through augmented reality shopping for lifestyle product
- It shows that correlation between age and shopping online are negatively correlated.
- It shows that correlation between education qualification and aware of new technology are negatively correlated.

### 5.2 SUGGESTIONS:

- Customers should embrace the opportunity to try out augmented reality on lifestyle products, and experiment with the technology to fully understand its capabilities and potential benefits.
- To fully experience augmented reality, customers should make use of multiple devices, including smartphones, tablets, laptops, or desktop computers, depending on the product and the intended use.
- Customers should interact with the product in the augmented reality environment, taking advantage of the opportunity to explore the product from all angles, and using various features and functions provided by the technology.
- Customers should provide feedback on their experience with augmented reality on lifestyle products, including any limitations or issues they encountered, to help

improve the technology and its applications.

- Customers should share their augmented reality experience with others, through social media, online reviews or word of mouth, to help spread awareness and generate interest.

### 5.3 CONCLUSION:

The study highlights the potential of augmented reality technologies in enhancing a customer's shopping experience for lifestyle products. The results of the study indicate that customers are more likely to engage with augmented reality features when they are available, and it positively impacts their purchase intentions. The findings further indicate that younger age groups are more receptive towards augmented reality, and it can be an effective tool for creating a personalized shopping experience. Thus, it is recommended that companies invest in augmented reality technologies to enhance customer engagement and foster long-term loyalty. Additionally, future studies can explore the impact of augmented reality on different retail sectors and highlight the role of ethics and privacy concerns in its adaptation.

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