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Impact Of Virtual Reality On Buyer's Online Shopping Experience: A Study Of Kukatpally, Hyderabad.

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ABSTRACT

The swift expansion of E- Commerce has changed how shoppers engage with online shopping platforms, connecting physical and digital retail environments. This research examines the impact of Virtual Reality (VR) on consumer habits in the e-commerce industry, particularly targeting the inhabitants of Kukatpally, Hyderabad. The goal is to evaluate the overall effect of virtual reality technology on consumers purchasing choices in online shopping. Data collected through a Google Forms survey that captures current experiences, utilizing survey responses from 120 participates. Through rigorous statistical analysis of this primary data, research clarifies the substantial effect of Virtual Reality , with findings showing a strong positive correlation between VR characteristics and purchasing decisions (R= 0.743). The regression findings show that around 55.26% of the fluctuations in purchasing choices is accounted for by VR--related factors. The research finds that Virtual Reality technology greatly improves the online shopping experience, resulting in better purchasing decisions.

Keywords

Virtual Reality, online shopping, consumer buying decisions, product comparison, engagement, correlation, regression, satisfaction, E-commerce, VR enabled features, Kukatpally.

INTRODUCTION

Background of the study

The E -Commerce industry has experienced rapid expansion worldwide and in India, fueled by the rise of smartphones and digital payments solutions. Internet shopping has evolved into a crucial aspect of consumers everyday routines because its ease, availability, and extensive ranges of products. However, despite of expansion, online shopping has traditionally faced a major limitation, such as the lack of opportunity for consumers to physically examine, feel, or test items prior to buying.

To address this obstacle, retailers are adopting cutting-edge technologies such as Virtual Reality. VR allows consumers to engage with products in a simulated three-dimensional setting, providing enhanced visualization, interaction, and comparison. By providing complete views and "try-on functionalities. In Kukatpally, where consumers are tech-savvy and digitally engaged, grasping the impact of VR technology is crucial.

Statement of the problem

E – Commerce in India is growing swiftly, yet consumers frequently feel unhappy because traditional 2D online platforms lack sensory and interactive features, leading to doubts about product fit, quality, and performance. Numerous e-commerce businesses invest significantly in VR functionalities without definitive proof of which particular aspects – usefulness, engagement, product comparison actually influence buying decisions. This research seeks to fill this gap offering empirical data via correlation and regression from consumers in Kukatpally.

Objectives

- To examine how customer satisfaction and the general assessment of VR- enabled platforms influence consumers purchasing choices.
- To evaluate of consumers plans to utilize VR platforms in the future influence their purchasing choices.
- To assess the overall effect of Virtual Reality technology on consumers purchasing choices in online shopping.

Scope Of The Study

The research is limited to the Kukatpally area of Hyderabad and does not reach other urban or rural locations. This location was selected because of its dense cluster of retail businesses and a population that is very open to innovations in online shopping. The research targets three specific psychological and behavioral construct associated with VR. Statistical analysis restricted to correlation and regression models to investigate relationships and forecasting effects.

Significance Of the Research

It offers concrete proof that VR factors greatly influence purchasing choices, with the regression model explaining over 55% of the variance in buying behavior, which results in sales conversions, aiding in rationalizing the significant expense of VR deployment.

Limitations

- Because the information was gathered through Google forms, the participants are restricted.
- The study is restricted to Kukatpally, Hyderabad, which limits its applicability to other areas.
- The study concentrates solely on specific VR – related factors and excludes additional external influences like price sensitivity, brand loyalty, income level, or access to technology, which could also affect purchasing choices.
- The research employs correlation and regression analysis to reveal relationships and influences, yet it does not confirm lasting behavioral modifications.

REVIEW OF LITERATURE

- Kim et al. (2021) – Investigated0020the role of interactivity and vividness in VR shopping; telepresence facilitated improved experiences, resulting in greater satisfaction and purchase intentions.
- Kim & choo (2023) – VR shopping enhanced consumers creativity through perceptual curiosity, indirectly raising approach intentions and satisfaction.
- Lai et. al (2024) they discovered that shoppers are likely to utilize AR in future purchases when it is user – friendly, beneficial, and offers an immersive experience.

Research Gap

Earlier research primarily emphasized psychological elements such as telepresence curiosity, and the intention to utilize VR or AR in retail. The majority of studies focused on purchase intention instead of actual buying choices. They also failed to integrate various VR features into a single comprehensive model. Additionally, there have been very few studies undertaken in I local Indian regions such as Kukatpally to assess the overall effect of VR on consumers purchasing choices.

Conceptual Framework

The framework shows that how the consumers ultimate action (Dependent variable) and their technology experience (independent variables) are related.

Variables that are independent that are affect the buyer. Overall assessment the consumer mental comparison of VR usefulness to more conventional approaches.

Future intention to use the consumer behavioral inclination for long term VR adoption.

RESEARCH METHODOLOGY

Research design

The research employs both qualitative and quantitative research design. Qualitative refers to the ways consumers perceive and experience virtual reality in the context of online shopping. A quantitative method is employed to assess the connection between VR attributes and purchasing choices through numerical data and statistical techniques like correlation and regression analysis.

Sample size

Information gathered from 120 participants in Kukatpally using a survey.

Method of collection

Main data gathered using a google form. Responses were assessed utilizing a Likert scale.

Statistical tools

Cronbach's Alpha was utilized to evaluate the reliability and internal consistency of the questionnaire items to confirm that the gathered data was trustworthy.

Correlation Analysis**:** Pearson's correlation coefficient was calculated to assess bi-variate associations between each independent variable and dependent variable.

Multiple Regression Analysis was employed Multiple Regression Analysis was employed to assess the collective and individual effects of VR features like usefulness, engagement, product comparison and purchase intention on buying choices.

DATA ANALYSIS AND INTERPRETATION

Analysis of Reliability (Cronbach alpha)

To assess the internal reliability of the questionnaire items evaluating virtual reality characteristics and purchase decisions. All constructs exhibit strong reliability ($\alpha > 0.86$) All constructs exhibit strong reliability ($\alpha > 0.86$), signifying that the questionnaire items reliably assess the intended concepts.

Analysis of Correlation

A correlation analysis was performed to investigate the connection between virtual reality features and purchasing decisions. Certain variables displayed weaker connections Certain variables displayed weaker connections, suggesting that not all VR features have the same impact on purchasing behavior.

Table: 1 Source: Primary data

Title: Pearson correlation matrix of Virtual Reality Dimensions

	Usefulness	Realistic	Confidence	Engagement	Confusion reduction	Produce comparison	Comfort	Innovation	Satisfaction
Usefulness	1	0.23	0.42	0.40	0.23	0.44	0.47	0.40	0.31
Realistic	0.23	1.00	0.35	0.25	0.19	0.34	0.28	0.24	0.19
Confidence	0.42	0.35	1.00	0.53	0.24	0.48	0.45	0.31	0.34
Engagement	0.40	0.25	0.53	1.00	0.22	0.51	0.49	0.35	0.35
Confusion reduction	0.23	0.19	0.24	0.22	1.00	0.22	0.30	0.28	0.20
Produce comparison	0.44	0.34	0.48	0.51	0.22	1.00	0.50	0.48	0.43
Comfort	0.47	0.28	0.45	0.49	0.30	0.50	1.00	0.48	0.45
Innovation	0.40	0.24	0.31	0.35	0.28	0.48	0.48	1.00	0.29
Satisfaction	0.31	0.19	0.34	0.35	0.20	0.43	0.45	0.29	1.00

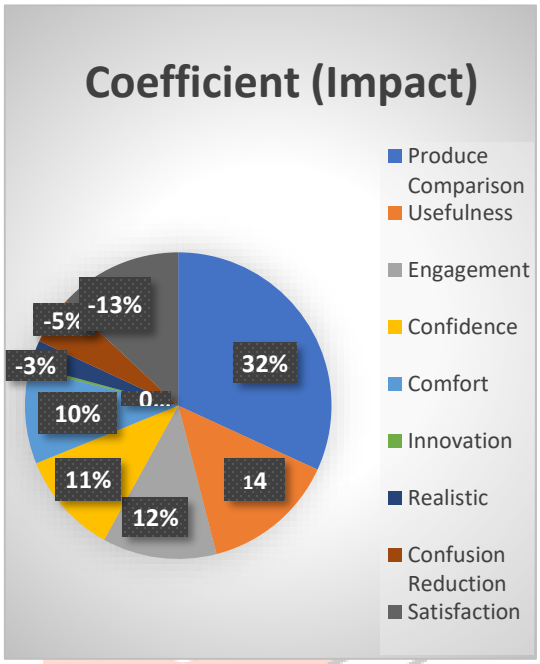
Among the variables, confidence, product comparison, and engagement show relatively stronger positive associations with the purchasing decision than other factors. Every customer assessment factor displays favorable correlations with purchasing choices. Confidence and engagement show the strongest correlation (r = 0.53%), followed by engagement and product comparison (r = 0.51%) and comfort and product comparison (r = 0.50%). This indicates that a favorable assessment of the VR experience is associated with increased purchase intent among consumers in Kukatpally. Customer satisfaction indicates a significant positive relationship with purchasing decisions; however, it implies that satisfaction by itself might not be the most potent direct influence on immediate purchase choices when compared to more practical elements of the VR experience. Innovation has a positive impact as well, though to a smaller degree. Every correlation is positive, suggesting that enhancing any element will not harm others.

Analysis of Regression

A multiple regression analysis was performed to assess the effect of virtual reality features on consumer purchasing choices. R square indicates that 55.2% of the variance in shoppers buying decision in Kukatpally can be accounted for by the nine VR related independent variables considered in this research. Adjusted R square (0.516): The model still demonstrates accounting for over 51% of the behavior, even when considering the number of variables. Importance because this values is much lower than the conventional alpha level of 0.05, the model is extremely significant.

Table: 2 chart : 1 Source: Primary data Significance of VR Factors on buying decisions (Graphical Presentation)

VR Factor (Variable)	Coefficient (Impact)	P-Value (Significance)
Produce Comparison	0.443852195	4.10882E-06
Usefulness	0.197050544	0.013734228
Engagement	0.167791941	0.024456497
Confidence	0.150940579	0.066189043
Comfort	0.138828639	0.16444538
Innovation	0.005	0.946635569
Realistic	-0.03828609	0.496830374
Confusion Reduction	-0.06981974	0.208069874
Satisfaction	-0.18196838	0.050014887



According to analysis when it comes purchasing decisions, product comparison has the biggest influence (32%). This demonstratives unequivocally that consumers appreciate virtual reality platforms primarily for their capacity to efficiently compare products before to purchase , positive contributions are also made usefulness (14%), engagement (12%), and confidence(11%) these variables shows VR platforms have a beneficial impact on purchase decisions when they are engaging, useful, and boost consumer confidence.

Realism (3%), innovation, all exhibit negligible influence, suggesting that technical characteristics by themselves do not significantly drives sales unless they offer useful benefits. Negative contribution (-13%) indicates general satisfaction by itself may not always transfer into decisions to buy right away and may on other influencing factors.

FINDINGS

- Virtual Reality elements demonstrate a favorable connection with consumers purchasing choices.
- The strongest factor in buying decision in product comparison, with usefulness, engagement following closely.

- Realism, confusion reduction, comfort and innovation demonstrates lessor or negligible impact.
- The comprehensive regression model indicates that VR attributes together influence consumer purchasing choices.

CONCLUSION

This research determines that Virtual reality technology significantly and positively affects consumer's online shopping experience in Kukatpally, Hyderabad specifically, factors such as product comparison, usefulness and engagement exert a greater influence on purchasing decisions compared to merely innovative and realistic elements. The regression findings reveal that VR related aspects account for just over half of the variance in purchasing choices, indicating a moderate yet significant degree of impact. VR particularly the capability to conduct product comparison rather than merely being awed by the platform's realism or creativity. For a VR platform to effectively turn a browser into a buyer, it needs to transcend visual gimmickry and offer highly engaging tools that assist the user in assessing and comparing products efficiently. The results indicate that VR technology improves the online shopping experience and aids in decision making, yet it cannot solely assure purchasing behavior. VR serves as a connection that diminishes consumer reluctance by offering a more engaging and informative shopping experience. Consequently, VR should be viewed as a significant supportive resource rather than the primary catalyst for online purchasing choices.

SUGGESTIONS FOR FUTURE RESEARCH

- The sample size could be expanded by selecting larger regions for study in different parts of the country to verify or evaluate variations in result based on location, allowing for a comparison of regional disparities in VR adaptation and effects.
- Researchers may explore additional factors like trust, perceived risk, or brand loyalty.
- Research might utilize sophisticated methods like structural Equation Modeling(SEM)

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