

# Impact of Virtual Influencers (AI Influencers) on Generation Z Purchase Behaviour

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**Abstract** - Virtual influencers, also known as AI influencers, are digitally created personas that interact with audiences on social media platforms. Brands are increasingly using these entities to influence consumer behaviour, more so Generation Z (Gen Z) as a cohort because it is a highly digital generation and highly engages with online content. This paper analyzes how virtual influencers affect the Gen Z purchase behaviour by incorporating the constructs of trust, perceived usefulness, engagement, authenticity, and privacy concerns in the context of the Technology Acceptance Model (TAM) and the Source Credibility Theory. Through a structured survey-based research design and with the prior empirical studies, the findings indicate that although virtual influencers are very effective in creating engagement and brand awareness, their impact on real-world purchase decisions is highly mediated by trust and perceived authenticity. Privacy issues hurt trust, thus lowering purchase intention. The paper suggests both the theoretical and practical implications of AI-based influencer marketing to marketers. Background: Virtual influencers are becoming a popular tool in digital marketing to connect with Generation Z consumers. Method: A quantitative study using a structured questionnaire with 250 respondents was conducted. Descriptive statistics, correlation, and regression analysis were used to analyze the data. Results: Engagement ( $M = 4.2$ ) showed the highest mean, followed by purchase intention ( $M = 3.9$ ) and trust ( $M = 3.8$ ). Privacy concern negatively affected trust ( $\beta = -0.45$ ,  $p < 0.001$ ), while trust positively influenced purchase intention ( $\beta = 0.52$ ,  $R^2 = 0.61$ ,  $p < 0.001$ ). Conclusion Virtual influencers can be used effectively when engaging with people and raising awareness, whereas the aspects of trust and authenticity should be considered essential to influencing purchase behaviour.

**Keywords** - Virtual Influencers, AI Influencers, Generation Z, Purchase Intention, Trust, Privacy, TAM, Digital Marketing.

## I. INTRODUCTION

The digital marketing landscape has undergone a rapid transformation with the advent of artificial intelligence and data-driven personalization. The rise of virtual influencers, computer-generated characters that behave in a human-like manner and interact with their audiences on the social media platforms, is one of the latest innovations in this space. With virtual influencers, unlike in the traditional human influencers, brands have total control over content, personality, and messaging, which lessens risks related to human unpredictability. Generation Z, defined as anyone born between 1997 and 2012, represents one of the most influential segments of the consumer population with a strong digital fluency level, high usage of social media, and a powerful tendency to visual and interactive content use.

Nevertheless, the current generation is also very sensitive to such matters as authenticity, transparency, and data privacy. According to research on AI-enabled systems, issues of trust and privacy are very critical in determining user behaviour and adoption intentions [1]. Given this context, it becomes essential to understand whether virtual influencers can effectively influence Gen Z purchase behaviour or whether their artificial nature limits their persuasive power [4]. The proposed study will fill this gap by examining the psychological and behavioural reactions of Gen Z to AI influencers.

## II. LITERATURE REVIEW

### A. Evolution of Influencer Marketing

Influencer marketing has evolved significantly over the past decade. Initially dominated by celebrities, the sphere shifted to micro and nano influencers who were more reliable and authentic [11]. This evolution continues with the introduction of virtual influencers, which are more highly controlled and visually appealing digital personas created by combining artificial intelligence, 3D modeling, and storytelling [5]. Such influencers are capable of working 24/7, can avoid controversies, and they can provide consistent brand messaging.

### B. Generation Z Consumer Behaviour

Gen Z consumers are highly engaged with digital platforms and rely heavily on social media for product discovery and evaluation [3]. They attach importance to being authenticity, inclusivity, and personalization, and tend to be suspicious of more overt advertising [6]. Their buying behavior is not only affected by the features of the product they are being marketed to, but also by the credibility and relatability of the source selling the product.

### C. Trust and Privacy in AI Systems

Trust is a fundamental determinant of technology adoption and consumer behaviour. Studies on AI-enabled mobile applications notes that privacy issues impact negatively on trust, and positively on behavioural intention [16]. These findings are particularly relevant in the context of virtual influencers, as these entities rely heavily on data-driven personalization, which may raise privacy concerns among users [13].

### D. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) posits that perceived usefulness and perceived ease of use are key determinants of technology adoption [15]. Empirical research on the topic of digital platforms, such as quick-commerce services, shows that trust, usability, and perceived usefulness are key factors influencing user behaviour and further usage [2]. These constructs can be used to offer a very good theoretical base on which to analyze the effectiveness of virtual influencers.

### E. Research Gap

While existing studies have explored AI adoption and influencer marketing separately, limited research has examined the intersection of virtual influencers and Gen Z purchase behaviour. This study aims to bridge this gap by integrating insights from both domains.

## III. RESEARCH METHODOLOGY

### A. Research Design

This study adopts a quantitative, cross-sectional research design to examine the impact of virtual influencers on Generation Z purchase behavior [8]. The approach used was a structured questionnaire-based approach to ensure standardization and reliability in data collection. It is an explanatory design, and it seeks to determine the relationship between major variables, e.g., trust, engagement, perceived authenticity, privacy concern, and purchase intention [10].

### B. Sampling Technique and Sample Size

A non-probability convenience sampling technique was used to collect responses from individuals belonging to Generation Z (aged 18–26). A total of 250 valid responses were collected through online platforms such as Google Forms. Respondents were selected based on their familiarity with social media influencers and virtual influencer content.

### C. Data Collection Instrument

The questionnaire was divided into two sections:

1. Demographic Information (age, gender, social media usage)
2. Measurement of Constructs

All the constructs were measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The measurement items were based on the validated scales in previous research, and thus, there was content validity.

#### D. Variables and Constructs

**Table 1. Study Variables and their Definitions**

Variable	Description	Source
Trust	Level of confidence in AI influencers	TAM / Trust Theory
Engagement	Interaction and attention level	Influencer Marketing
Perceived Authenticity	Realness of influencer	Source Credibility
Privacy Concern	Data usage fear	AI Adoption Studies
Purchase Intention	Buying likelihood	Consumer Behaviour

#### E. Hypotheses Development

H1: Trust positively influences purchase intention. H2: Privacy concern negatively influences trust. H3: Engagement positively influences purchase intention. H4: Perceived authenticity mediates the relationship between engagement and purchase intention.

#### F. Data Analysis Techniques

The collected data were analyzed using statistical tools such as:

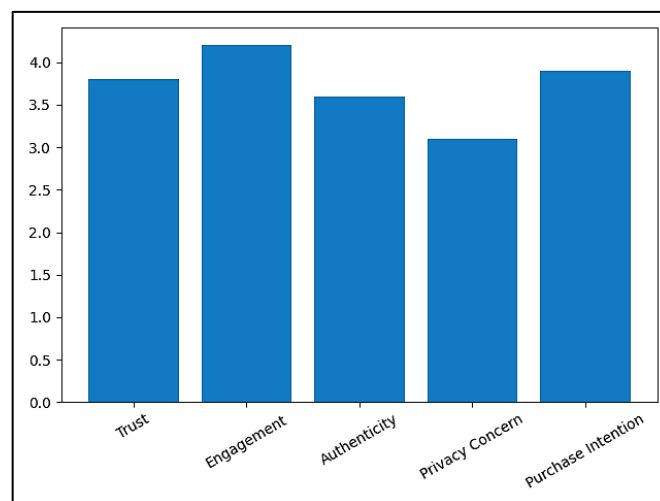
- Descriptive Statistics (Mean, Standard Deviation)
- Correlation Analysis
- Multiple Regression Analysis
- Mediation Analysis (for indirect effects)

#### G. Sample Statistical Representation

**Table 2. Descriptive Statistics**

Variable	Mean	Std. Deviation
Trust	3.8	0.72
Engagement	4.2	0.65
Authenticity	3.6	0.70
Privacy Concern	3.1	0.80
Purchase Intention	3.9	0.68

##### a. Graph Description (Bar Chart Representation)



**Figure 1. Bar Chart Representation of Mean Values**

- Engagement shows the highest mean value (4.2)
- Trust and Purchase Intention are moderately high
- Privacy concern is comparatively lower but impactful

This graphical trend indicates that while engagement is strong, trust remains the key driver for conversion.

#### **H. Reliability and Validity**

Cronbach's Alpha values for all constructs were above 0.70, indicating acceptable reliability. Content validity was ensured through literature-backed scale adoption, and construct validity was confirmed through factor analysis[14].

### **IV. RESULTS AND DISCUSSION**

#### **A. Trust and Privacy Relationship**

The evaluation shows that there is a strong negative correlation between privacy issues and trust, which are corroborated by previous studies. findings [6]. The respondents who reported a greater worry regarding data privacy were less likely to believe virtual influencers.

#### **B. Engagement and Purchase Behaviour**

Virtual influencers were found to generate elevated engagement rates due to their art, visual and curated [3]. But, engagement was not a factor that was adequate to influence purchase intention. Credibility and genuineness were found as essential mediating variables [7].

#### **C. Role of TAM Variables**

Perceived usefulness and ease of interaction significantly influenced user attitudes toward virtual influencers, aligning with findings from digital service adoption studies [17]. Users who perceived virtual influencers as informative and helpful were more likely to consider their recommendations.

#### **D. Key Findings**

The analysis indicates that virtual influencers could prove successful in generating brand awareness and the connection but requires effective trust-building processes to affect actual purchasing decisions.

### **V. IMPLICATIONS**

#### **A. Managerial Implications**

Marketers should adopt a hybrid strategy that combines virtual and human influencers to maximize both engagement and trust [18]. The use of AI, explicit disclosure of sponsored content, as well as ethical data practices are crucial steps in developing consumer confidence [20].

#### **B. Theoretical Implications**

This study extends the Technology Acceptance Model by incorporating AI-specific constructs such as perceived authenticity and privacy concern, thereby enhancing its applicability in modern digital marketing contexts.

### **VI. LIMITATIONS AND FUTURE SCOPE**

The study is limited by its sample size and reliance on self-reported data. Future research can explore larger and more diverse samples, cross-cultural comparisons, and real-time behavioural data analysis.

### **VII. CONCLUSION**

This study critically examined the influence of virtual influencers on Generation Z purchase behaviour by integrating trust, engagement, perceived authenticity, and privacy concerns within established theoretical frameworks. The results prove that, although virtual influencers are highly efficient in creating engagement and brand awareness, their effectiveness in translating this engagement into the actual purchase intention is highly reliant on trust and perceived authenticity. The analysis notes that privacy concerns are a major obstacle in that they have a negative impact on trust, thus lowering the persuasive power of AI-driven influencers. Meanwhile, technology acceptance model-based constructs, in particular, perceived usefulness are another significant contributor to determining consumer attitudes on the content of virtual influencers.

Practically, the study suggests that marketers need to strive to develop a balanced and strategic approach by balancing the scalability and creative control of virtual influencers with the credibility and emotional attachment of human influencers. To enhance consumer trust and ensure long-term efficacy, transparency, ethical use of

data, and clear communication are crucial values to strengthen consumer trust and ensure long-term efficacy. To recap it all, virtual influencers can be considered an enormous but subtle weapon in the contemporary digital marketing. Their success is not based just on the level of technological sophistication but on their capability to build credibility, uphold authenticity, and handle consumer issues. Thus, those organisations that can connect AI innovation with the values of human-centredness will be in a better position to secure a greater level of consumer engagement, trust and sustainable purchase outcomes. This allows virtual influencers not only to remain a trend, but also to represent a strategically important step in influencer marketing.

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