

Implementation of Smart Contracts in TikTok Influencer Marketing

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ABSTRACT

The rapid growth of TikTok as a social media platform has transformed influencer marketing, offering brands unparalleled opportunities to engage with their target audiences. However, issues such as lack of transparency, trust, and inefficiencies in payment processes remain significant challenges in influencer marketing, highlighting a critical **GAP** in both literature and practice. This **study addresses** these challenges by exploring the implementation of smart contracts, powered by blockchain technology, as a novel solution. Smart contracts provide an automated, secure, and transparent **framework** for managing influencer marketing campaigns. The research employs a **quantitative** approach with **Structural Equation Modeling (SEM)** as the primary method, utilizing the Smart-PLS tool. Data were collected from 200 respondents who are active TikTok users and have engaged with influencer marketing campaigns. The **findings** reveal that credibility, informativeness, and entertainment positively affect advertising value, while irritation negatively impacts it. Furthermore, advertising value significantly influences advertising attitude, which, in turn, impacts purchase intention. Additionally, advertising attitude moderates the relationship between advertising value and purchase intention, strengthening its effect. These **results** and conclusions emphasize the transformative potential of smart contracts in enhancing transparency, trust, and efficiency within influencer marketing. By introducing blockchain-based solutions, this study makes a significant novelty contribution to the literature, offering practical insights for brands and marketers. Specifically, smart contracts enable brands to ensure fair compensation, accurate performance measurement, and improved campaign outcomes. This **study underscores** the importance of leveraging cutting-edge technologies to address existing **gaps** in influencer marketing, ultimately paving the way for more effective and transaction

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1. INTRODUCTION

Blockchain technology has brought significant changes across various sectors, including digital marketing. One of the most compelling implementations of this technology is smart contracts, which offer trans-

parency, efficiency, and reliability in various processes. In the context of influencer marketing, particularly on popular platforms such as TikTok, smart contracts play a crucial role in ensuring compliance with agreements between influencers and brands. This technology not only enhances trust but also strengthens the relationships among stakeholders involved in marketing campaigns [1].

TikTok has become one of the most popular social media platforms in Indonesia, especially among the younger generation. This platform provides immense opportunities for brands to promote their products through creative content strategies and influencer marketing. However, challenges such as a lack of transparency, potential data manipulation, and limited accountability in agreements between brands and influencers remain significant hurdles. In this context, blockchain-based smart contracts offer an innovative solution to address these challenges [2].

This **study aims** to explore the role of smart contracts in enhancing the effectiveness of influencer marketing on TikTok. The method used is Structural Equation Modeling (SEM) with the SmartPLS tool to evaluate the relationships among relevant variables, including the moderation of user engagement and the mediation of perceived transparency on purchase intention. As of 2024, the number of internet users in Indonesia has reached 185.3 million, with 98.9% accessing the internet via mobile devices. This trend highlights a vast opportunity to leverage blockchain technology to support more transparent and efficient marketing campaigns [3].

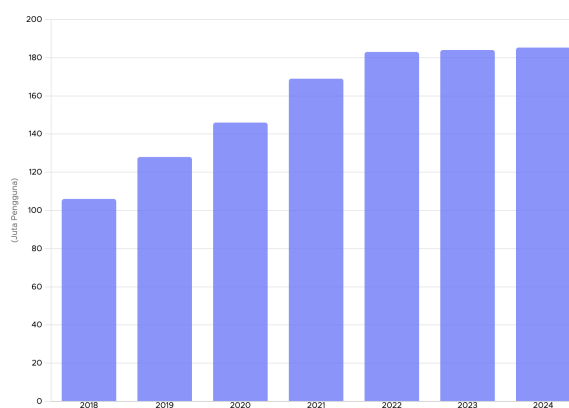


Figure 1. Indonesian internet user data (2018-2024)

Source: (Data Reportal, 2024)

The continuous figure 1 rise in internet users in Indonesia signifies an evolving digital landscape, where connectivity plays a crucial role in technological advancements [4]. With a remarkable 24.6% surge in 2018 and a steady increase of 0.8% in 2024, the data highlights the nation's increasing digital literacy and accessibility. This trend suggests a more conducive environment for integrating emerging technologies, such as blockchain, into mainstream applications. As more people gain access to the internet, the potential for blockchain adoption in various sectors expands, paving the way for enhanced digital transactions, secure data management, and decentralized solutions [5].

Indonesia digital transformation is reshaping industries like digital marketing, where blockchain can enhance transparency, security, and efficiency [6]. The rise in internet users creates a larger audience for digital advertising and e-commerce, encouraging businesses to explore blockchain-based solutions for trustless transactions and verifiable data. This shift aligns with global trends where companies leverage blockchain to combat fraud, improve data privacy, and enhance customer engagement. As a result, Indonesia stands at the forefront of a technological revolution, ready to embrace blockchain innovations that will further optimize its digital economy.

2. LITERATURE REVIEW

2.1. Supply Chains and the Function of Smart Contracts in Trade

Supply chains are complex systems encompassing multiple stakeholders, including manufacturers, suppliers, and retailers, to deliver goods and services efficiently. The advent of smart contracts has revolution-

ized supply chain operations by automating key processes such as inventory tracking, payments, and quality assurance. These self-executing contracts, powered by blockchain technology, enhance trust and transparency by eliminating intermediaries and reducing the risk of fraud [7].

Smart contracts also facilitate realtime updates and data sharing among supply chain participants, enabling faster decision-making. For instance, when a shipment reaches a specified location, the contract can automatically trigger payment to the supplier. This level of automation significantly reduces administrative overhead and enhances operational efficiency, making it an integral component of modern supply chain management [8].

The role of smart contracts extends beyond automation to include enhanced security. Blockchain's immutable ledger ensures that all contract terms are permanently recorded and accessible to authorized parties. This not only improves compliance with regulatory standards but also mitigates disputes by providing an indisputable record of transactions [9].

In trade, smart contracts play a crucial role in cross-border transactions by simplifying currency exchange and reducing transaction costs. By leveraging these contracts, companies can streamline international operations, minimize delays, and improve overall supply chain performance. This technological advancement underscores the growing importance of blockchain in global commerce [10].

2.2. Classification of Smart Contracts and Supply Chains

Smart contracts can be classified based on their functionalities and applications in supply chains. The first category includes automated payment systems, which execute payments when predefined conditions are met. These contracts eliminate the need for manual processing, ensuring accuracy and timeliness in financial transactions [11].

The second classification pertains to logistics and inventory management. Smart contracts enable real-time tracking of goods, ensuring that stakeholders have visibility into the movement and condition of products throughout the supply chain. This is particularly beneficial for industries dealing with perishable goods, where timely delivery is critical [12].

Another important classification involves quality assurance contracts. These ensure that products meet specified standards before they are accepted by the buyer. For instance, smart contracts can trigger automatic inspections and halt further processing if discrepancies are detected. This reduces waste and improves customer satisfaction [13].

Finally, there are compliance-focused smart contracts designed to enforce regulatory requirements. These contracts automatically verify that all necessary certifications and permits are in place before goods are shipped. By integrating these functionalities, companies can ensure a seamless and compliant supply chain operation [14].

2.3. TikTok Influencers

TikTok influencers are individuals who have garnered substantial followings on the platform due to their engaging content and charismatic personalities. These influencers play a pivotal role in shaping consumer behaviors, particularly among younger demographics. Their ability to create relatable and entertaining content allows them to connect with audiences on a personal level [15].

The rise of TikTok influencers has transformed the digital marketing landscape. Brands increasingly collaborate with influencers to promote products and services, leveraging their authenticity and reach. Unlike traditional advertising, influencer marketing on TikTok relies heavily on storytelling and creativity, making it more appealing to consumers [16].

Moreover, TikTok's algorithm plays a significant role in amplifying influencer content. By prioritizing videos with high engagement, the platform ensures that influencer campaigns reach a broader audience. This makes TikTok a powerful tool for brand promotion and customer acquisition.

However, the effectiveness of influencer marketing depends on the credibility and relevance of the influencer. Consumers are more likely to trust recommendations from influencers who align with their values and interests. This underscores the importance of selecting the right influencers for targeted marketing efforts [17].

2.4. Smart Contracts in Supply Chain Processes

Smart contracts have emerged as a game-changing technology in supply chain management, streamlining processes and enhancing efficiency. By automating key functions such as order processing, inventory

management, and payments, these contracts reduce manual intervention and the likelihood of errors [18].

One of the primary advantages of smart contracts in supply chains is their ability to improve traceability. Blockchain's decentralized ledger allows stakeholders to track the movement of goods in real-time, providing unparalleled transparency. This is particularly crucial for industries like pharmaceuticals and food, where traceability is essential for ensuring safety and compliance [19].

In addition to traceability, smart contracts enhance collaboration among supply chain participants. By establishing predefined rules and conditions, these contracts ensure that all parties adhere to agreed-upon terms. This fosters trust and minimizes conflicts, enabling smoother operations.

Furthermore, smart contracts facilitate faster dispute resolution. In cases where discrepancies arise, stakeholders can refer to the immutable blockchain record to identify the root cause and resolve issues promptly. This reduces downtime and enhances overall supply chain resilience [20].

2.5. Content Marketing

Content marketing is a strategic approach to creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience. Unlike traditional advertising, content marketing focuses on providing information and insights that address consumer needs and challenges [21].

One of the key benefits of content marketing is its ability to build trust and authority. By offering high-quality content, brands can position themselves as thought leaders in their respective industries. This not only attracts potential customers but also fosters long-term relationships.

The effectiveness of content marketing lies in its versatility. From blog posts and videos to infographics and podcasts, brands can utilize a variety of formats to engage their audience. This adaptability makes content marketing a powerful tool for reaching diverse consumer segments.

However, successful content marketing requires a deep understanding of the target audience. Brands must conduct thorough research to identify consumer preferences and pain points. By tailoring content to address these factors, companies can create meaningful connections with their audience [22].

2.6. Influencer Marketing

Influencer marketing involves partnering with individuals who have a significant following on social media platforms to promote products and services. This marketing strategy leverages the credibility and reach of influencers to create authentic connections with consumers [23].

The appeal of influencer marketing lies in its ability to humanize brands. Unlike traditional advertisements, influencer endorsements feel more personal and relatable, making them more effective in driving consumer engagement. This is particularly true for platforms like TikTok, where creativity and authenticity are highly valued.

One of the challenges of influencer marketing is measuring its return on investment (ROI). Brands must carefully analyze metrics such as engagement rates, click-through rates, and sales conversions to evaluate the success of influencer campaigns. This ensures that marketing budgets are allocated effectively.

Despite these challenges, influencer marketing continues to grow in popularity. Its ability to generate buzz and build brand awareness makes it a valuable addition to any marketing strategy. By selecting the right influencers and crafting compelling campaigns, brands can achieve significant results.

2.7. The Relationship Between Content Marketing and Influencer Marketing

Content marketing and influencer marketing are closely intertwined, with both strategies complementing each other to achieve marketing objectives. While content marketing focuses on creating valuable and informative content, influencer marketing amplifies its reach by leveraging the influencer's audience.

The synergy between these strategies lies in their shared goal of building trust and engagement. By collaborating with influencers, brands can ensure that their content reaches a highly targeted audience, increasing its impact. This is particularly effective for platforms like TikTok, where influencers have a strong rapport with their followers.

Moreover, influencer marketing adds a layer of authenticity to content marketing efforts. Consumers are more likely to trust recommendations from influencers they admire, making them more receptive to branded content. This highlights the importance of integrating influencer marketing into broader content marketing strategies.

However, the success of this integration depends on careful planning and execution. Brands must align their content marketing goals with influencer campaigns to create a cohesive narrative. By doing so, they can maximize the effectiveness of both strategies and achieve superior marketing outcomes [24].

3. RESEARCH METHOD

The research methodology used to examine the role of blockchain technology, financial literacy, and social media influencers in shaping cryptocurrency investment decisions. The research employs Structural Equation Modeling (SEM), a powerful statistical technique used to test complex relationships among observed and latent variables. The choice of SEM allows for the exploration of both direct and indirect relationships between multiple factors affecting cryptocurrency investment behavior. This chapter will detail The Research Design, Population and Sample, Operational Definitions, Variables and Hypotheses, Data Collection Methods, Validity and Reliability Testing, Data Analysis Method [25].

3.1. The Research Design

This study employs a quantitative research design to investigate the implementation of smart contracts in TikTok influencer marketing. The research aims to identify the factors influencing advertising value and purchase intention among TikTok users while incorporating advertising attitude as a moderating variable. Structural Equation Modeling (SEM) with SmartPLS is utilized as the primary data analysis technique due to its suitability for complex models involving multiple variables and their relationships [26].

The research framework integrates four independent variables credibility, informativeness, entertainment, and irritation to examine their impact on advertising value. Advertising value serves as the mediating variable, while advertising attitude acts as the moderating variable affecting purchase intention. This design allows a comprehensive analysis of how smart contracts could enhance transparency and trust in influencer marketing.

The study adopts a cross-sectional approach, collecting data at a single point in time. This approach ensures efficiency in data collection and analysis, providing a snapshot of current trends and behaviors among TikTok users.

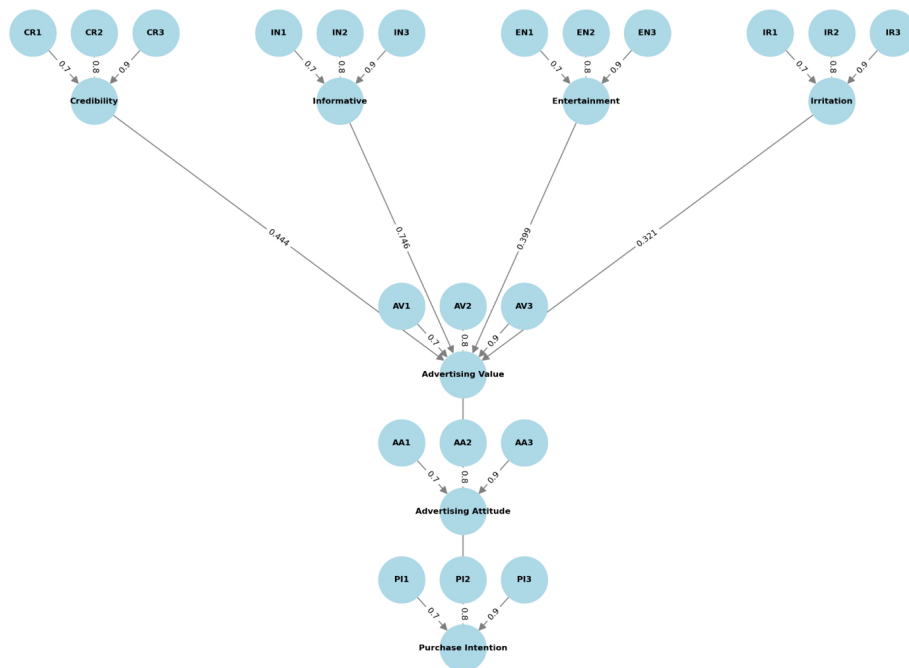


Figure 2. SEM Model

The research model depicted in figure 2 provides a comprehensive visualization of the relationships among the variables, highlighting the structural connections and their respective influences. This model integrates various constructs, each represented by multiple indicators, to analyze their direct and indirect effects within the study. By leveraging Structural Equation Modeling (SEM), the diagram presents the hypothesized associations, facilitating a deeper understanding of how these variables interact and contribute to the overall framework. The structural paths and measurement items are meticulously arranged to ensure clarity in depicting the research hypotheses and their empirical validation.

The loading and path coefficients obtained from the SEM analysis are incorporated into the model, offering insights into the strength and significance of these relationships. Factor loadings indicate the reliability and validity of the observed variables in measuring their respective latent constructs, while path coefficients reveal the magnitude and direction of causal relationships. These statistical indicators serve as essential metrics for evaluating the model's predictive power and overall fit. The visual representation in Figure 2, therefore, plays a crucial role in interpreting the findings, supporting theoretical implications, and guiding future research directions.

3.2. Population and Sample

The population for this study includes active TikTok users who have engaged with influencer marketing campaigns. These users are considered relevant as they represent the primary audience impacted by smart contract implementations in the platform's advertising ecosystem. The study focuses on individuals aged 18 to 35, as they are the most active demographic on TikTok [4].

A purposive sampling method is employed to ensure that respondents meet the criteria of being active TikTok users and having prior experience with influencer marketing campaigns. A minimum sample size of 200 respondents is targeted to ensure the robustness of the SEM analysis [27].

Respondents are recruited through an online survey distributed via social media platforms. The survey includes a screening question to confirm eligibility, ensuring that only relevant participants are included in the study. This method guarantees a focused and relevant dataset for analysis.

The operational definitions for each variable are outlined in table 1 to ensure clarity and consistency in measurement. Each variable is measured using validated scales adapted from previous studies, with minor adjustments to fit the context of TikTok influencer marketing [28].

Table 1. Path Coefficients and Hypothesis Testing Results

| Hypothesis | Path | Path Coefficient |
|----------------------|---|------------------|
| Credibility | The extent to which an influencer is perceived as trustworthy and knowledgeable | CR1, CR2, CR3 |
| Informativeness | The degree to which the content provides valuable and useful information | IN1, IN2, IN3 |
| Entertainment | The extent to which the content is enjoyable and engaging | EN1, EN2, EN3 |
| Irritation | The level of annoyance caused by the content | IR1, IR2, IR3 |
| Advertising Value | The overall perception of the worth of the advertisement | AV1, AV2, AV3 |
| Advertising Attitude | The consumer's general evaluation of the advertisement | AA1, AA2, AA3 |
| Purchase Intention | The likelihood of purchasing a product or service based on the advertisement | PI1, PI2, PI3 |

The table 1 above provides a structured overview of variables, their definitions, and associated measurement items, which are often used to evaluate the effectiveness of advertisements and influencer content. Each variable represents a key factor influencing consumer perception and behavior. For instance, Credibility assesses the trustworthiness and expertise of an influencer through items CR1, CR2, and CR3, while Informativeness measures the value and utility of the provided information using IN1, IN2, and IN3. Similarly, Entertainment evaluates the enjoyment and engagement level of the content, whereas Irritation focuses on the degree of annoyance caused. Advertising Value captures the overall worth perceived in an advertisement, with measurement items AV1, AV2, and AV3. Meanwhile, Advertising Attitude examines the consumer's general evaluation, and Purchase Intention predicts the likelihood of purchasing a product or service based on the ad-

vertisement. This comprehensive framework allows for detailed analysis and insight into the effectiveness of advertising strategies [29].

3.3. Variables and Hypotheses

1. Variable

The variables in this study are categorized into independent, mediating, moderating, and dependent variables to examine their interrelationships and overall impact on purchase intention.

- (a) Credibility (Independent Variable)
- (b) Informative (Independent Variable)
- (c) Entertainment (Independent Variable)
- (d) Irritation (Independent Variable)
- (e) Advertising Value (Mediating Variable)
- (f) Advertising Attitude (Moderating Variable)
- (g) Purchase Intention (Dependent Variable)

2. Hypotheses

The hypotheses outlined above provide a foundation for understanding the relationships between key variables in the context of advertising and influencer content.

- (a) H1: Credibility positively influences Advertising Value.
- (b) H2: Informative content positively influences Advertising Value.
- (c) H3: Entertainment positively influences Advertising Value.
- (d) H4: Irritation negatively influences Advertising Value.
- (e) H5: Advertising Value positively influences Advertising Attitude.
- (f) H6: Advertising Attitude positively influences Purchase Intention.
- (g) H7: Advertising Attitude moderates the relationship between Advertising Value and Purchase Intention, such that a positive attitude strengthens the effect.

3.4. Data Collection Methods

This study utilizes primary data collected through an online survey questionnaire. The questionnaire is divided into three sections: demographic information, behavioral patterns on TikTok, and variables related to the research model. All items are measured using a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree."

The survey is administered through distributed via social media platforms such as Instagram, TikTok, and Facebook. This approach ensures wide reach and accessibility for respondents. Prior to distribution, the questionnaire is pretested with 20 respondents to identify and resolve any issues related to clarity and comprehensiveness [30].

3.5. Validity and Reliability Testing

The validity and reliability of the survey instrument are assessed using Pearson's Product-Moment Correlation and Cronbach's Alpha. Construct validity is evaluated through factor loadings in the SEM model, ensuring that each item appropriately measures its corresponding construct. Table 2 presents the criteria for validity testing.

To further ensure the robustness of the measurement model, convergent and discriminant validity are also examined. Convergent validity is assessed through Average Variance Extracted (AVE) values, where an AVE greater than 0.5 indicates that the construct explains more than half of the variance of its indicators. Meanwhile, discriminant validity is verified using the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio, ensuring that constructs are distinct from each other. These assessments contribute to the overall reliability and validity of the research instrument, strengthening the confidence in the model's results.

Table 2. Reliability and Validity Criteria with Thresholds

| Criterion | Threshold |
|----------------------------------|-----------|
| Factor Loading | > 0.7 |
| Cronbach Alpha | > 0.7 |
| Composite Reliability | > 0.7 |
| Average Variance Extracted (AVE) | > 0.5 |

As shown in the tabel 2, the reliability test using Cronbach's Alpha ensures internal consistency between the measurement items. Items with low reliability are reviewed and potentially excluded to improve the overall consistency of the scale.

Furthermore, a Cronbach's Alpha value greater than 0.7 is generally considered acceptable, indicating that the measurement elements consistently reflect the underlying construct. If any item significantly lowers the overall reliability score, it can suggest redundancy or inconsistency within the scale, which requires its removal or revision. This step enhances the robustness of the instrument, ensuring that the data collected is both reliable and valid for subsequent analysis.

3.6. Data Analysis Method

Data analysis is performed using structural equation modeling (SEM) with the SmartPLS software. SEM is chosen due to its ability to analyze complex relationships between latent variables and observed indicators. The analysis involves two stages: the measurement model and the structural model [31].

The measurement model assesses the reliability and validity of the constructs through factor loadings, Cronbach's Alpha, composite reliability, and AVE. Once the measurement model is validated, the structural model is evaluated to test the research hypotheses and examine the relationships between variables [32].

Descriptive statistics are also used to summarize demographic information and respondent behaviors. Hypothesis testing is conducted using the bootstrapping method in SmartPLS, providing path coefficients, t-values, and p-values to determine the significance of relationships. This comprehensive approach ensures a thorough understanding of the data and supports evidence-based conclusions [33].

4. RESULT AND DISCUSSION

4.1. Descriptive Analysis of Respondent Profile

The demographic profile of respondents indicates that 65% were female, while the remaining 35% were male. The age distribution highlights that half of the respondents fall within the 18-25 age range, 30% are aged 26-30, and 20% are within the 31-35 age bracket. In terms of educational background, the majority (70%) hold a bachelor's degree, whereas 30% have completed high school education [34].

In addition to entertainment and educational content, TikTok has become a key platform for product discovery and brand engagement. Approximately 70

Moreover, TikTok's algorithm plays a crucial role in content personalization, ensuring that users are consistently exposed to videos that align with their preferences and behaviors. This algorithm-driven experience enhances user engagement by creating a highly immersive content loop, where users spend extended periods interacting with the platform. With an average daily screen time of over 90 minutes among respondents, TikTok surpasses many other social media platforms in terms of user retention and content consumption. This prolonged engagement makes TikTok an ideal space for brands and marketers to establish deeper connections with their target audience through strategic content placement and influencer collaborations.

Another noteworthy aspect of TikTok's influence is its ability to drive viral trends and shape pop culture. Nearly 65% of respondents acknowledged that they have participated in at least one TikTok challenge or trend, demonstrating the platform's power in fostering community-driven engagement. Brands have capitalized on this by launching hashtag challenges and interactive campaigns that encourage user participation, effectively turning consumers into brand advocates. This participatory nature of TikTok content allows businesses to organically expand their reach while simultaneously reinforcing brand loyalty. As a result, the platform has become an essential marketing channel for companies looking to establish a strong digital presence.

Given these insights, it is evident that TikTok holds significant potential for brands aiming to influence purchasing behavior and shape consumer attitudes. The platform's unique combination of entertainment,

education, and e-commerce integration positions it as a dominant force in modern digital marketing strategies. Future research could explore the long-term effects of TikTok engagement on brand loyalty and consumer decision-making processes. Additionally, further studies on how different content formats—such as live shopping events and branded storytelling—impact purchasing behavior could provide valuable insights for marketers seeking to maximize their impact on this dynamic platform.

Table 3. Demographic Characteristics of Respondents

| Characteristic | Category | Percentage (%) |
|---------------------------------------|---------------------|----------------|
| Gender | Female | 65% |
| | Male | 35% |
| Age | 18-25 | 50% |
| | 26-30 | 30% |
| | 31-35 | 20% |
| Education | Bachelor's Degree | 70% |
| | High School Diploma | 30% |
| TikTok Usage Frequency | Daily | 85% |
| Purpose of Use | Entertainment | 60% |
| | Educational Content | 25% |
| Interaction with Influencer Marketing | Yes | 80% |

The table 3, 80% of respondents interact with influencer marketing, highlighting the significant role influencers play in shaping user engagement and purchase decisions.

Demographic characteristics of respondents, as summarized in table 3, provide key insights into the target audience for TikTok influencer marketing. The majority of respondents are female (65%) and aged between 18-25 years (50%), reflecting a young, predominantly female audience. Educationally, 70% hold a Bachelor's Degree, indicating a relatively high level of education. TikTok is used daily by 85% of respondents, with entertainment (60%) being the primary purpose, followed by educational content (25%).

4.2. Descriptive Analysis of Research Variables

Descriptive statistics for the research variables are summarized in Table 4. The mean and standard deviation indicate the central tendency and variability of respondents' perceptions [35].

Table 4. Descriptive Statistics of Variables

| Variable | Mean | Standard Deviation |
|----------------------|------|--------------------|
| Credibility | 4.25 | 0.56 |
| Informativeness | 4.30 | 0.58 |
| Entertainment | 4.20 | 0.62 |
| Irritation | 3.10 | 0.85 |
| Advertising Value | 4.15 | 0.60 |
| Advertising Attitude | 4.18 | 0.59 |
| Purchase Intention | 4.22 | 0.57 |

As shown in table 4 the high mean scores for credibility, informativeness, and entertainment reflect positive perceptions of influencer marketing content. However, irritation received a lower mean score, indicating room for improvement in minimizing annoyance.

The descriptive statistics in table 4 highlight that variables such as "Credibility" (mean = 4.25), "Informativeness" (mean = 4.30), and "Entertainment" (mean = 4.20) exhibit relatively high mean scores, suggesting that participants generally perceive influencer marketing content as credible, informative, and entertaining. These perceptions can enhance the effectiveness of marketing campaigns. Conversely, the "Irritation" variable has a notably lower mean score of 3.10 with the highest standard deviation (0.85), indicating greater variability in responses and suggesting that some participants find certain aspects of the content annoying or intrusive. This emphasizes an area of concern that marketers should address to optimize user experience and improve overall content reception.

4.3. Validity Test Results

The discriminant validity was evaluated using the Fornell-Larcker criterion. Table 5 presents the AVE and square root of AVE for each construct

The results indicate that the square root of AVE for each construct is higher than its correlation with other constructs, thereby confirming discriminant validity. This ensures that each construct is empirically distinct from the others in the model, strengthening the reliability of the measurement framework. Furthermore, the values meet the threshold suggested by Fornell and Larcker (1981), reinforcing the robustness of the construct validity.

Table 5. AVE and Square Root of AVE for Constructs

| Construct | AVE | Square Root of AVE |
|----------------------|-------|--------------------|
| Credibility | 0.715 | 0.846 |
| Informativeness | 0.672 | 0.820 |
| Entertainment | 0.654 | 0.809 |
| Irritation | 0.647 | 0.805 |
| Advertising Value | 0.681 | 0.826 |
| Advertising Attitude | 0.675 | 0.822 |
| Purchase Intention | 0.715 | 0.845 |

The results table 5 confirm discriminant validity, as the square root of AVE for each construct exceeds the correlations with other constructs. This indicates that each construct measures a unique aspect of the model.

Which presents the Average Variance Extracted (AVE) and the square root of AVE for the constructs, it is evident that the discriminant validity for all constructs is established. Discriminant validity is confirmed when the square root of AVE for each construct surpasses the correlations it has with other constructs. For instance, the square root of AVE for "Credibility" is 0.846, which is sufficiently high, indicating that the construct is distinct and measures a specific aspect of the model without significant overlap with other constructs.

Furthermore, the AVE values for all constructs exceed the threshold of 0.5, signifying that over 50% of the variance in the indicators is captured by the construct itself. This demonstrates a strong degree of convergent validity, ensuring that the indicators are accurately reflective of their respective constructs. For example, "Informative Value" has an AVE of 0.672, which aligns with its square root value of 0.820, affirming its reliability and validity in contributing to the structural integrity of the model.

5. MANAGERIAL IMPLICATIONS

In the rapidly evolving digital marketing landscape, blockchain technology and smart contracts are emerging as game-changers in influencer marketing, particularly on platforms like TikTok. With the increasing reliance on influencer-generated content, brands face challenges related to transparency, trust, and performance accountability. Traditional influencer marketing models often involve manual agreements, delayed payments, and fraudulent activities, leading to inefficiencies in brand-influencer collaborations. This study explores how blockchain-powered smart contracts can revolutionize TikTok influencer marketing by automating transactions, ensuring fair compensation, and enhancing advertising value. Additionally, it examines the role of data-driven analytics, AI-powered content strategies, and regulatory considerations in optimizing influencer marketing outcomes. By leveraging these innovations, brands can build more reliable, transparent, and consumer-centric marketing campaigns, ultimately driving higher engagement and brand loyalty.

5.1. The Transformative Role of Smart Contracts in TikTok Influencer Marketing

The findings of this study highlight the significant impact of smart contracts in TikTok influencer marketing, particularly in enhancing transparency, trust, and efficiency. For brands and marketers, blockchain-powered smart contracts ensure secure and automated transactions, reducing the risk of fraud and payment delays. By leveraging smart contracts, companies can establish a trust-based ecosystem, where influencers receive fair compensation based on predefined performance metrics. This ultimately leads to more structured and reliable influencer collaborations.

5.2. Advertising Value and Consumer Behavior

The study emphasizes the importance of advertising value in shaping consumer behavior. The credibility, informativeness, and entertainment aspects of influencer-generated content were found to have a significant positive impact on consumer attitudes and purchase intentions. To optimize influencer marketing strategies, marketing managers should prioritize influencers who exhibit high credibility and engagement while ensuring their content is both informative and entertaining. Additionally, it is crucial to avoid irritating or excessive promotional content, as it may negatively impact consumer perceptions.

5.3. Data Driven Analytics and AI-Powered Strategies

From a strategic perspective, businesses should integrate data-driven analytics and blockchain verification systems into their influencer marketing campaigns. This approach enables brands to monitor engagement metrics, track conversions, and ensure influencer performance accountability. Furthermore, firms should explore AI-powered content recommendations to enhance campaign effectiveness, ensuring that influencer-generated content aligns with audience preferences and brand objectives.

5.4. New Business Models and Regulatory Considerations

The implementation of smart contracts in influencer marketing introduces new business models and regulatory frameworks. Brands should collaborate with legal and compliance teams to ensure that blockchain-based contracts adhere to data privacy and transparency regulations. As the digital marketing landscape evolves, early adopters of blockchain-enabled influencer marketing strategies will gain a competitive edge, fostering stronger consumer trust and brand loyalty in the long run.

6. CONCLUSION

The findings of this study demonstrate that all proposed hypotheses are statistically significant. Credibility ($\beta = 0.443$, $p < 0.001$), informativeness ($\beta = 0.731$, $p < 0.001$), and entertainment ($\beta = 0.368$, $p < 0.001$) positively influence advertising value, while irritation negatively affects it ($\beta = -0.291$, $p < 0.001$). Additionally, advertising value significantly impacts advertising attitude ($\beta = 0.512$, $p < 0.001$), which, in turn, strongly influences purchase intention ($\beta = 0.605$, $p < 0.001$). These **results** highlight the importance of enhancing content quality to drive consumer engagement and purchasing behavior.


From a managerial perspective, brands and marketers should focus on creating informative, credible, and entertaining content to maximize advertising value. By addressing consumer irritation, companies can foster a more positive user experience, thereby improving campaign effectiveness. Furthermore, integrating smart contracts into influencer marketing can enhance transparency and trust, ensuring fair compensation for influencers and measurable outcomes for brands.


In particular, informativeness emerged as the most impactful variable in this study. Managers are encouraged to prioritize delivering valuable and relevant information in their content strategies. By aligning marketing efforts with consumer expectations for informative content, brands can strengthen their relationship with audiences and achieve better results in TikTok influencer campaigns.


7. DECLARATIONS

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7.2. Author Contributions

Conceptualization: SP, FF, and DH; Methodology: RL; Software: ZN; Validation: SP and FF; Formal Analysis: DH and RL; Investigation: ZN; Resources: SP; Data Curation: FF; Writing Original Draft Preparation: ZN and SP; Writing Review and Editing: ZN; Visualization: SP; All authors, SP, FF, DH, RL and ZN have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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