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Building Trust in Influencer Marketing: The Role of Blockchain and AI in Shaping Consumer Perceptions

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ABSTRACT: The effectiveness of influencer marketing relies heavily on audience trust to engage with an influencer's content as part of their process of discovering products, evaluating them, and making purchasing decisions. The advent of Artificial Intelligence (AI) and Blockchain has created new opportunities to form this trust through the use of sponsored digital content. In addition to providing a high degree of personalization through AI Mediated Feeds in terms of frequency of viewing, visibility, etc., AI also provides tools to assist in creating high-quality video content including editing, captioning, and visuals. However, AI Assisted Content Tools also provide new avenues for users to perceive manipulations that detract from their perception of authenticity by the creator. Blockchain based Transparency Systems have been developed to verify disclosure proof and create campaign audit trails that provide evidence of the accuracy of information being shared. This study will examine how these two technologies influence consumer trust in influencer marketing. A review of existing literature regarding the key factors influencing trust will be provided, which include; Disclosure Clarity, Authenticity, Expertise, Brand Fit, Relationship Strength, Social Proof. Additionally, the interaction of AI Mediated Exposure and AI Assisted Content will be discussed as it relates to blockchain-based verification cues. The research found that while AI increases the ability to personalize content and make it relevant to individual consumers, it simultaneously creates more opportunity for suspiciousness if commercial intent or alterations made to the content are unknown. Conversely, Blockchain based Verification Systems can enhance credibility and accountability within the influencer marketing industry when verification methods are accessible, believable, private, and non-intrusive. Therefore, to establish a trusting relationship with consumers, influencer marketing should incorporate both technology and ethical campaign governance practices in conjunction with transparent disclosure and accountable platforms.

1. INTRODUCTION

Influencer marketing is becoming increasingly popular as a key area of online advertising. Users look to influencers to discover products, evaluate their quality, and make purchasing decisions. Trustworthiness (the degree to which users perceive an influencer's statements) influences both the interpretation of claims and the assessment of risk and value. Trust is very vulnerable to being manipulated in sponsored settings, because advertisers have strong financial motivations to present

messages in a way that will best promote their interests. Two trends are changing this environment (Antoniadis et al., 2026). The first trend is AI-based social media. Social media platforms are using artificial intelligence to mediate social interactions. They do this via rank-and-recommend algorithms used in the feed management system to limit the number of times a post may be viewed and the amount of time it is visible. Artificial intelligence also supports the creation of content by providing auto-captioning functions, auto-enhancing photo filters, and automated video editing. This increases the amount and polish of the created content. However, AI-assisted content creation may also eliminate some of the authenticating aspects of influencer content and potentially increase consumers' skepticism about the authenticity of the posted content [5].

The second trend is blockchain-based transparency systems. Proposed applications of blockchain technology in influencer marketing include developing tamper-resistant logs, enabling auditing trails, disclosing sponsorships, hashing content at posting-time, and recording campaign events. Such data can be used to help verify the accuracy of claims and resolve disputes. Nevertheless, there are limitations associated with the implementation of blockchain-based systems in terms of identifying individuals; reliance on platforms; privacy concerns; and cost concerns [8].

These two trends are creating conflicting effects on consumer perception. For example, AI can provide increased personalized content experience; however, consumers may view AI-assisted content creation as manipulative. On the other hand, blockchain technology can enhance the reliability of the evidence supporting disclosed information; however, consumers may view blockchain technology as invasive and complex. Therefore, understanding how AI and blockchain technology interact to impact trust cues is important for brands, influencers/creators, social media platforms, and regulatory agencies [2].

There has been considerable research conducted on influencer trust; however, recent technology-driven changes create several new voids. Most studies regarding influencer trust assume that all content is generated by humans and that exposure occurs due to user-initiated follow activities. However, neither assumption holds true in today's algorithmically generated feeds and AI-assisted content generation environments. Research on AI in marketing tends to concentrate on personalization and automation but does not typically link those findings to influencer trust processes. While there is a growing body of research on blockchain technology within marketing and advertising that tends to focus on supply-chain transparency and programmatic ad verification, relatively little work exists that connects blockchain to both influencer disclosure and consumer trust. Moreover, few studies exist that examine both AI and blockchain together in relation to influencing trust formation among consumers. Some studies measure credibility and attitudes toward the advertisement/product/service. Other studies measure perceived deception and privacy concern [3].

The goal for this study is to look at how both Blockchain and Artificial Intelligence (AI) have impacted consumer trust with respect to their belief in Influencers and to combine existing research into one framework. Specific goals of this study include:

- Investigating the impact of Feed Curation through AI mediated feeds and AI assisted content generation on consumer reliance upon Trust Cues in an Influencer Marketing environment.
- To analyse the impact that blockchain-based evidence of disclosure, audit-trails, and support for identity verification have on both transparency and perceived credibility (trustworthiness) of sponsored influencer content.
- To assess how the simultaneous use of AI and blockchain will ultimately impact consumer trust, perceptions of deception, and purchase intent toward influencer marketing efforts.

The following specific research questions will guide this effort:

RQ1. What are the effects of using AI mediated feeds and AI assisted content to create a consumer's trust cues in an Influencer Marketing context?

RQ2. In what ways do blockchain-based methods of providing evidence of disclosure, audit trails, and identification verify support impact transparency and perceived credibility of sponsored influencer content?

RQ3. How will the combination of AI and Blockchain ultimately result in consumer trust levels, deception perception and subsequent purchase intentions in Influencer Marketing contexts?

Overall, this paper makes four primary contributions. First, it combines influencer trust literature with both AI-mediated exposure literature & AI-assisted content-product literature into a single organized structure. Second, it identifies/consolidates blockchain-based transparency mechanisms relevant to influencer-marketing contexts & correlates those mechanisms with

appropriate consumer-perception constructs. Third, it develops an integrative model explaining when/under-what conditions combinations of AI & blockchain support/trust-building among consumers & when they raise new doubts among them. Fourth, it generates a series of potential research question(s)/evaluation need(s) intended to facilitate/enable future empirical testing/practical-deployment decisions [1].

2.THEORETICAL BACKGROUND

2.1 Trust and persuasion foundations in marketing

Trust in marketing means believing that a message is sent by someone who is honest and trustworthy. Trust aids the acceptance of advertising under uncertain conditions. Trust lowers the perceived risks involved with making purchasing decisions. The study of persuasion has found that there are two ways to consider how people process messages.

The first route involves evaluating the evidence contained within the message. The second route involves using cues like; similarity to oneself (familiarity), attractiveness, and social approval. Influencer marketing typically causes cue-based processing since the content presented is short and repetitive. As well, AI moderated feeds have shown to enhance cue-based processing by providing repeated exposure to the same content and rapid scrolling capabilities. Transparency via blockchain-based methods will be able to aid evidence-based processing by providing verifiable documentation of all disclosures made and claims associated with campaigns [3].

2.2 Source Credibility and Trust Transfer in Influencer Marketing

Source credibility theory identifies credibility as a function of both trustworthiness and expertise. Trustworthiness relates to honesty and integrity. Expertise relates to perceived knowledge and ability. In addition to these factors, credibility may depend upon how much an influencer fits with a specific product. Posts by influencers that show consistency among previous posts may help build credibility. Changes in post content style or sponsorship frequency by an influencer may weaken credibility [6].

Trust transfer is the movement of trust from an influencer to a brand or from a platform to an influencer. An influencer who is considered trustworthy will improve consumer attitudes toward brands they promote. Conversely, if consumers do not believe their environment, i.e., distrust platforms, then even the most influential and liked influencer cannot affect consumer behaviour. AI-mediated rankings may expose users to additional content but this does not mean they actively chose to see it. As such, this increased familiarity may contribute to perceptions of less independent influences. When users perceive verification via blockchain-based methods as being accountable it may help facilitate trust transfer [4].

2.3 Concepts of Technology Trust & Information Integrity

Technology trust is confidence in a system that provides information or documents. Social media examples include confidence in recommendation systems, labelling of content, and moderation. Confidence may be reduced if users suspect manipulative activity or un-transparent ranking processes. Users' suspicions of manipulated content or optimized/routine/ repetitive content may be enhanced due to the nature of AI mediation.

Information integrity pertains to the quality and durability of information over time. Integrity encompasses accuracy, completeness and protection against tampering. Blockchains are commonly used for ensuring integrity because they can provide time-stamped records. With respect to influencer marketing, integrity relates to whether or not disclosure occurs at the time of posting, stability of claims throughout time and stability of edits. Blockchain can support integrity claims as long as records are tied to content fingerprints, provided that identity bindings are credible. Limitations exist when records are generated using "off-chain" data or when platform IDs are utilized [7].

2.4 Conceptual Definitions and Construct Boundaries

Consumer trustworthiness is defined as perceived honesty/sincerity in sponsored and unsponsored posts created by an influencer. Influencer expertise is defined as perceived capability of an influencer to evaluate the value of products and provide valid information. Consumer trust is defined as a confidence judgment that directs the degree of acceptance of claims and purchase-related decisions. Purchase intention is defined as expressed probability of purchasing or testing a product advertised through an influencer's content [9].

Exposure to AI mediated content is defined as platform-generated selection/ordering of content for a particular user. AI-assisted content is defined as utilization of tools that create/generate text/images/video and/or modify them so that they appear differently than before presentation cues were altered. Blockchain based transparency is defined as use of decentralized ledgers to document disclosure proofs/campaign event logs and other validation records. Perceived information integrity is defined as a perception/belief that a published record is enduring/stable/hard to alter after it has been published [10].

Conceptual boundaries need to be established for each construct. AI effects need to be distinguished between exposure effects and content effects. Exposure effects involve frequency/visibility of repetition of content. Content effects involve realism/language/style/editing strength of content. Blockchain effects need to be distinguished between evidence effects and governance effects. Evidence effects involve evidence regarding disclosure and timing proof. Governance effects involve identification of who generates records and who verifies records and who has access to records [12].

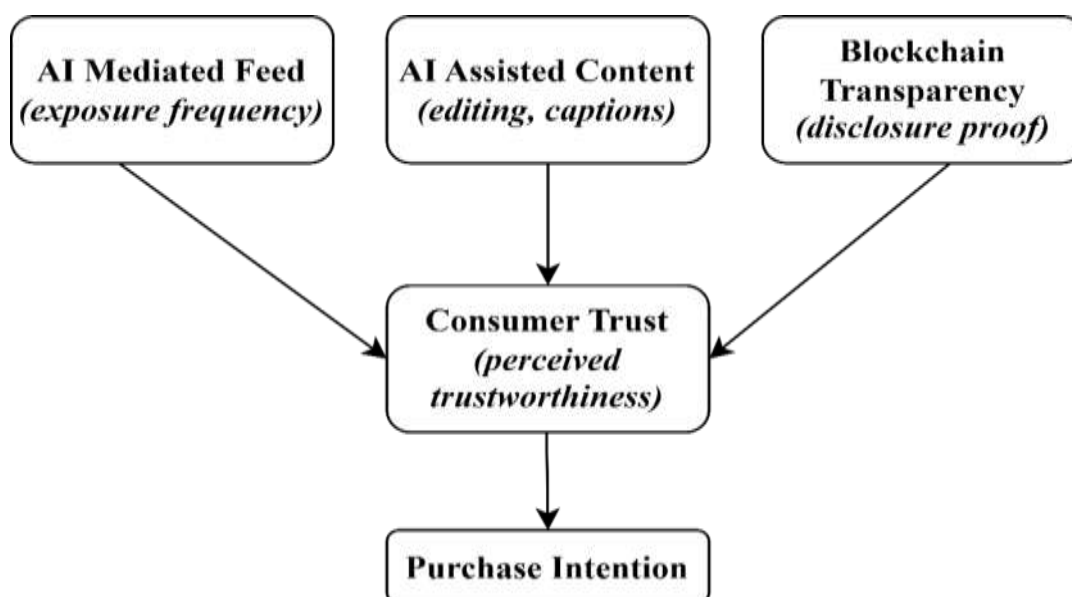


Figure 1. Combined Influence of AI Mediation and Blockchain Transparency on Consumer Trust and Purchase Intention

Consumer trust in influencer marketing is shaped by three inputs as shown in Figure 1. These are AI-mediated feed exposure (the way consumers see influencers), AI-assisted content (how the information from the influencer is produced) and Blockchain-based Disclosure Proof (the transparency of how the influencer has disclosed their affiliation). These all contribute to a consumer's perception of an influencer's trustworthiness. A consumer's trust can therefore support a positive purchase intention.

3.LITERATURE REVIEW

A large amount of research into influencer marketing has identified trust as a major component driving consumer reactions to influencer endorsements. A number of studies have indicated that trust influences perceptions of the credibility of the influencer and their likelihood to deceive. Additionally, trust enhances an individual's willingness to rely upon claims made by the influencer when there is uncertainty. Overall, both a creator's level of expertise/trustworthiness and his/her perceived level of expertise, influence an individual's attitudes towards the product being advertised and an individual's intentions to make a purchase. Such relationships tend to be stronger when the risk associated with purchasing the product is greater and/or when the individual does not possess a significant amount of pre-existing knowledge regarding the product [11].

Researchers also suggest that an individual's level of trust in an influencer is influenced by the type of relationship established with the influencer. An individual is likely to develop a sense of "closeness" to the influencer (and subsequently accept recommendations) if they perceive themselves as having a similar personality/interest as the influencer. Moreover, researchers find that this relationship-based development of trust in the influencer can positively impact an individual's trust in the brand that the influencer is promoting. However, research also indicates that if the endorsement appears strictly transactional in nature

or if the sponsor is frequently disclosing the fact that they are sponsoring the content, then trust will not transfer from the influencer to the brand [13].

Another area of repeated focus within the study of influencers is disclosure. As previously mentioned, researchers find that consumers view a lack of disclosure as deceptive and that the commercial intent behind sponsored content should be disclosed as soon as possible after the start of the advertisement. Researchers explain why disclosure impacts an individual's reaction to sponsored content using the concept of "persuasion knowledge." Persuasion knowledge refers to an individual's ability to recognize when they are being persuaded. Once an individual recognizes that they are being persuaded, they can attempt to mentally modify their interpretation of the message so that it aligns with their own needs/attitudes. If disclosure occurs before the consumer develops a high degree of persuasion knowledge, then they will likely continue to accept the message. However, if disclosure is delayed until after the consumer has developed a high degree of persuasion knowledge, then they may begin to infer that they were deceived and therefore lose trust in the creator and ultimately evaluate the brand negatively. As previously stated, researchers also acknowledge that the negative consequences of poor disclosure do not always result in reduced persuasion. There are certain situations where disclosure can actually protect a person's level of trust in an influencer by signalling that they are acting honestly. Conversely, in cases where a consumer perceives commercial motivation behind sponsored content and where a significant amount of diagnostic information exists in regards to the product, then disclosure can actually negatively impact an individual's decision-making process. Therefore, researchers conclude that although disclosure plays a critical role in reducing deception, it does not necessarily play a direct role in increasing persuasion. Rather, it is essential that consumers be aware of whether or not a post is sponsored in order to maximize their chances of developing a positive attitude towards the product and making a subsequent purchase. In addition, researchers note that factors related to how disclosure is presented to consumers (i.e., placement and visibility), along with various features unique to social media platforms (e.g., short video/story formats), can significantly affect how successful disclosure is in impacting consumer behaviour. For example, due to shorter lengths of time spent consuming short video/story formats (versus longer formats), viewers may miss disclosure notices due to limited viewing times/caption visibility [16].

Another emerging body of research focuses on how algorithmic ranking and recommendation systems affect who is visible as an influencer and how many times an individual sees their content. The literature suggests that increased familiarity among consumers with specific creators results in increased perceived credibility and trustworthiness, regardless of whether or not followers actively follow them. Ultimately, these exposures create impressions about creators being widely accepted/promoted/endorsed or broadly applicable [14].

While some research finds benefits in terms of increased exposure and familiarity through algorithmic rankings/recommendations, others highlight potential drawbacks. Specifically, research identifies several limitations including; decreased exposure diversity among users and increased usage of superficial heuristic cues (e.g., popularity/popularity cues/aesthetic cues). Furthermore, promotion saturation among algorithms can lead to skepticism amongst users towards influencer content. More specifically, under extremely high levels of promotion density, even honest influencers can see decreased levels of user trust.

Finally, recent studies have noted that artificial intelligence (AI) is increasingly used by creators to produce their content. Studies describe a range of uses for AI including editing/enhancing images/drafting captions/assembling videos. Although AI assisted content creation can enhance engagement and attract more attention (which in turn increases perceived popularity/credibility), it can also potentially harm authenticity cues. For example, when AI generated language appears generic/unoriginal/consummate; consumers may perceive a loss in "voice". Similarly, when AI generates over-enhanced images/video, consumers may perceive a loss in "realism", and both losses may contribute to suspicion, which can further reduce trust/purchase intention; especially for products whose representations require truthful experiential representations [15].

4. INFLUENCER MARKETING TRUST DRIVERS

4.1 Disclosure and transparency practices

Disclosure (disclosing that a post contains sponsored material) is the most important trust-related clue for sponsored influencer content. When disclosures are clear, they indicate that the sponsor's intentions will be openly stated and not concealed. Clarity of disclosure depends upon the wording, location, and formatting of a disclosure [17]. A short, straightforward label placed at the top of an influencer's caption will be noticed more easily than a tag added later in a caption, or one added in the middle of

numerous hashtags. Influencers' use of platform labels can enhance visibility; however, their value increases when they are consistently presented.

Additionally, transparency encompasses the clarity of support received. Types of support may include compensation, complimentary products, travel assistance, or affiliate commission. If the type(s) of support are unclear to audiences, then audiences may infer greater bias. Credibility is impacted by consistency. An influencer who consistently discloses sponsorships in their postings tends to have higher credibility than those who do so sporadically. As noted previously, irregular disclosure may cause audiences to question honesty regardless of the number of disclosed postings [16].

Disclosure via AI mediated feeds can strengthen the negative effects of poor disclosure. Because fast-scrolling through social media platforms, and watching videos less than sixty seconds long diminishes viewers' ability to read captions and review all relevant aspects of content, a disclosure which is technically included may be overlooked. However, blockchain-based methods of establishing proof of disclosure could contribute to increased accountability; but ultimately, increasing trust amongst consumers relies on whether consumers perceive the verification method clearly and accurately [20].

4.2 Authenticity and Content Quality Cues

A measure of authentic representation indicates that the content has been created from actual experiences and opinions. Examples of authenticity indicators include spontaneous language usage, an objective evaluation of products/services, and visible contextual elements (e.g., unedited sequences, everyday moments). Conversely, excessively polished content may positively affect perceptions of quality and negatively impact perceptions of authenticity. Therefore, excessive polishing may lead to perceptions that sponsored content is manufactured promotional materials [18].

Examples of quality indicators in content include explanation clarity, total amount of information provided, and relevancy of supporting data. Generally speaking, high-quality content may help establish trust within an audience because it signifies effort and competence. In environments where AI assists in creating content, there is potential for greater consistency and improved readability [24].

4.3 Expertise Fit and Relationship Strength

Expertise represents the perceived knowledge level and competence. Within the realm of influencer marketing, expertise is indicated by accurate technical statements made about products/services, practical advice offered regarding product/service use, and continuous reasoning throughout a posting. In product categories deemed to have high-risk levels associated with them, expertise becomes highly significant. For example, in travel and health/finance related products, audiences generally expect specific detail and warning(s) [19].

Fit refers to the degree to which an influencer's identity matches the product category. When fit exists strongly between an influencer's identity and a particular product category, the resultant endorsement appears much more believable. Conversely, when fit does not exist strongly between an influencer's identity and a product category, the resultant endorsement may appear solely transactional in nature. Relationship strength represents the extent to which audiences feel connected to an influencer [21]. Audiences tend to accept messages more readily when they perceive a strong relationship with an influencer as evidenced by benevolent intent.

While AI-mediated exposure creates familiarity with an influencer through repeated exposure in an audience member's feed; therefore, potentially diminishing the need for direct interaction between an influencer and its target audience; blockchain-based methods of establishing transparency may mitigate this effect by enhancing perceptions of accountability. This relationship relates to Research Question Three because exposure-driven familiarity and verification-driven accountability may occur simultaneously [22].

4.4 Social Proof & Engagement Signals

Signals representing social proof include likes, comments, shares, saves, follower numbers and/or observable brand interactions. These signals may influence trust through inferred popularity. Popular items/products tend to be viewed as evidence that an item/product is valuable/useful or that an item/product is socially acceptable in certain communities. Additionally, high levels of engagement may represent trends in popularity and subsequently lower perceived risk in certain cases [26].

However, social proof may misrepresent reality as well. Artificially inflated follower numbers or "bot" generated engagement are widespread topics of conversation. If audiences believe that artificial engagement is being utilized (i.e., fake followers/bots), then trust will decline. AI-generated rankings can exacerbate this issue due to engagement signals used within these rankings. Posts that receive high amounts of engagement are ranked more prominently resulting in a feedback loop that continues to emphasize popularity cues regardless of content quality [23].

Blockchain based identity auditing tools may provide possible solutions to artificially inflating engagement numbers. Although research has shown little correlation between using these types of tools and reductions in skepticism amongst consumers regarding these issues. Ultimately, trust will continue to rely on whether consumers view the tool as credible and independent. This relationship relates to Research Question Two as the mechanism of transparency must correlate to perceived trust outcomes [25].

4.5 Brand Factors & Campaign Design Factors

Brands significantly impact influencer trust. Brands selecting influencers with a strong match for their product/service offering and allowing them to make balanced evaluations are likely to minimize suspicion. Conversely, brands requiring scripted claims will likely produce both low perceived authenticity and damage both brand and influencer trust. Finally, campaign frequency impacts perceived income cues and perceived independence from other influences [26].

Finally, campaign design includes disclosure regulations, content guidelines, substantiation requirements for claims made and monitoring practices. Clear contracts that allow for open discussions about sponsored content can positively affect trust. Creating pressure to conceal sponsored relationships may create high-risk situations such as backlash and regulatory actions against both the influencer and the sponsoring brand [30].

Blockchain-based disclosure proof methods can enhance campaign management functions by providing documented evidence of pre-agreed upon disclosure standards and tracking instances of compliance by influencers. While AI systems can assist with targeted advertising and personalized messaging, ultimately the overall impact will be dependent on how transparent communication is conducted surrounding the transparency process and how targeting avoids perceived manipulation [28].

5. AI AND CONSUMER PERCEPTION IN INFLUENCER MARKETING

5.1 AI mediated feeds and algorithmic exposure

Posts are selected for ranking and recommendation based on behavioural data (e.g., watch time, likes, saves, comments, etc.) from the profiles of influencers. Therefore, influencers' ability to choose their own exposure to their Content is limited. The repeated viewing of some posts creates familiarity. Familiarity can be interpreted as credibility even though there may be little credible evidence of an influencer's knowledge base or honesty [27].

Comparison patterns are altered by algorithmic exposure

When feeds prioritize similar creator formats and similar product types, then the perspectives presented will likely be very narrow. In this case, consumers will rely more heavily on simple criteria such as popularity and production value. Reliance on alternative sources of information will also decrease. Thus, under these circumstances, exposure histories (not message quality) are used more frequently to judge trust [30].

Saturation and promotion effects of algorithmic exposure

The number of sponsored posts present in a feed can lead to an overall skepticism toward all influencer Content. Skepticism toward the influencer and the brand(s) they represent can occur due to this overall skepticism. The same creator may have different perceptions depending on the surrounding feed.

5.2 effects on trust and authenticity of AI generated and AI enhanced Content

AI tools can create or modify influencer Content. Some examples include:

- Text generation can draft captions and scripts, product summaries, etc.
- Visual tools can enhance images and video through colour correction and smoothing and object removal.
- Editing tools can automate cut selection and audio cleanup.

- These tools can make Content clearer and aesthetically pleasing.

If the message is still believable after being made clearer and more appealing, attitudinal measures toward a brand may increase along with purchasing intentions. However, if the enhancements are exaggerated, believability can suffer. Decreases in believability can lead to decreases in authentic judgements. Decisions regarding this depend on the category of product and the level of risk associated with it. Low-risk products may be accepted as entertaining with heavy enhancement. High-risk products with heavy enhancement may be considered deceitful. This connects to rq3 because while blockchain-based disclosure proofs may mitigate distrust related to deception, distrust may exist regardless of disclosure if an audience perceives an AI-enhanced post as misrepresentative [29].

Perceived expertise based on AI generated Content

Detailed Content within captions can result in increased expertise ratings for influencers. Generic or repetitive captions produced by AI-generated tools can result in decreased expertise ratings. The reason for this is that repetition leads to a perception of less individuality among posts.

5.3 detection, suspicions, and authenticity judgments

Detection and suspicion determine the response of consumers. Detection refers to whether or not an audience recognizes the presence of AI-generated or edited Content. Suspicion relates to whether or not an audience interprets the use of AI as misleading. Accuracy of detection varies based on individual levels of literacy and Content type. Small enhancements typically go undetected by most audiences. Large enhancements are typically detected via inconsistencies in visuals or unnatural scenes.

Increases in suspicion cause a significant drop in authenticity judgments. If the use of AI is viewed as supporting editing without affecting factual meaning, then authenticity can remain unaffected. If an audience views the use of AI as creating fabrication or hiding truthfully then authenticity judgments can significantly drop. Drops in authenticity judgments can lower trustworthiness and lower purchasing intentions [31].

5.4 concerns related to Consumer vulnerability and personalization

Personalization utilizes AI to identify and provide influencers with Content that matches user interests and behaviour. While personalization has been effective at increasing relevance, concerns related to manipulation and privacy have grown.

Audiences who perceive that targeted advertising is overly specific may experience reduced feelings of autonomy. Reduced autonomy can lead to heightened levels of reactance and a lack of trust in both the platform and the influencer.

Concerns related to vulnerability stem from groups who are potentially more influenced by persuasive messages directed at them. Younger audiences and those with limited media literacy tend to be more responsive to repeated exposures and social proof cues. Therefore, when algorithmic exposure occurs repeatedly to vulnerable populations, the potential for increased influence exists; however, awareness of this process tends to be lacking [32].

6. BLOCKCHAIN FOR TRANSPARENCY AND EVIDENCE INTEGRITY

Auditing goes well beyond just documenting disclosure. Audits track various campaign events such as creation of offers, acceptance of those offers by the creator, approval of content, confirmation of posting, and settlement. Documentation of these events supports audits after they have occurred and supports dispute resolution should there ever be conflicting information regarding the timing or approvals associated with a campaign event [35].

Trustworthiness ultimately comes down to visibility and understanding. A disclosure proof is of very little benefit to a consumer's perceptions of trustworthiness unless the proof is clearly visible via some simple cue. Trustworthiness increases when a clear link or badge of verification exists and/or when the purpose and meaning behind the disclosure is clearly communicated to the consumer [33].

6.1 Methods to establish identity and credibility

Establishing identity is one major area of weakness in many transparency models. An address proves ownership of a private key; however, it does not prove ownership of an influencer account. To bind stronger to an account, many systems require additional steps including account linking. One way to achieve this is to create a signed message from the account being linked.

Another method includes using a platform-provided challenge/response tool. A third option includes obtaining authentication/verification from an issuer who then issues a valid credential [36].

Methods based on credentialed approaches utilize verifiable credentials, or registration entries to indicate whether a creator or brand has been authenticated/verified. The credential itself can include details such as: the identity of the authenticator/issuer; expiration date/period; and/or scope (e.g., specific platform handles). The credential can then reference logged disclosure proofs to potentially reduce impersonation risks and enhance accountability [34].

Assurance of an individual's identity also addresses the issue of account takeovers. As mentioned earlier, even strong initial binding can be broken once an account has been compromised. Therefore, better designs require periodic re-verification and revocation lists and multi-key control for agency-managed accounts. Such decisions directly impact both user experience and costs. Ultimately, the design decision regarding how much weight to place on establishing a trusted identity versus ease-of-use affects consumers' willingness to perceive an advertisement as trustworthy. Poor identification methods can result in false attribution and increased perceived deception upon discovery [33].

6.3 Mechanisms to build reputation and incentives

Reputation-based mechanisms generate scores based on logged behaviour. Scores can represent a variety of behaviours including consistent use of disclosures and frequency of disputes and completed campaigns. Scores can be assigned to individuals and organizations (i.e., creators and brands). These scores can assist partners in selecting potential collaborators/partners and assess potential risks associated with collaborating with other entities. However, the success of reputation-based systems relies heavily on whether or not all relevant events were documented. Selective documentation of events can negatively impact reputation systems [37].

Incentivization mechanisms seek to promote compliance. Escrow models release payment funds only after a disclosure proof is successfully created and anchored. Staking models reduce a stake after confirmed violations have been verified. Some systems award tokens for adhering to compliance guidelines.

Regardless of incentives employed, gaming risks remain. Coordinated actions among parties (collusion) can artificially inflate reputations by creating multiple low-value campaigns. Sybil attacks occur when weak identity protocols allow actors to create duplicate identities/account(s). A robust design requires strong identity protocols and established procedures for resolving disputes.

7. CASE STUDIES AND INDUSTRY EXAMPLES

7.1 Blockchain advertising verification and audit initiatives

Block graph and Comcast Advertising consortium model: Comcast unveiled a blockchain-based technology platform designed to enhance the efficiency and utilization of data throughout the premium video ad planning process, targeting, execution, and measurement; this will occur along with partners NBCUniversal, Disney, Channel 4, Cox Communications, Altice USA, Mediaset Italia, and tf1 group. One of the main objectives of the new platform is to create greater data utilization efficiency among different screens while limiting the amount of direct data exchange between parties.

A subsequent industry report mentioned that NBCUniversal has been testing the platform and noted that the value proposition includes providing the ability to match data without having to send customer information to a third party. As a result, this model is significant for Governance of influencer marketing since many of the disputes related to trust occur due to lack of access to shared evidence among brands, agencies, and Platforms. A controlled audit layer can decrease disagreements regarding what data was utilized and what metrics were measured during a campaign [35].

7.2 AI-driven influencer campaign practices

The First example of AI-driven influencer campaigns is an AI human travel influencer campaign for destination marketing.

Influencer campaign "Smash the Ordinary" by Yas Island Abu Dhabi and Pickyourtrail for India:

This example is notable for its use of AI-mediated creative design as a campaign strategy and as an example of a trust issue since the consumer's evaluation of the credibility of lived-experience cues may not always be available when an AI-persona is part of the narrative.

AI-enabled scalability of influencer content reuse in consumer brands

Unilever uses generative-AI workflows to enable scalable creation of influencer marketing assets via digital twins of products and quick re-purposing of created content into multiple formats. According to reporting in the Wall Street Journal Unilever has claimed successful results (measured at the campaign level) from these activities. These examples demonstrate the potential for AI to act as both a production/distribution accelerator for creating/ delivering content to consumers, and as an enabler to increase consistency in branding/campaign messaging over time [38].

7.3 lessons for adoption and Governance

Lesson #1 -- adoption of new technology models strongest when tech solves clear coordination problem(s)

Block graph is specifically being developed to help solve a common coordination problem - allowing for secure data collaboration across competing media companies that have difficulty directly exchanging data. This type of solution provides better trust through establishing clearer rules for data usage/matching.

Lesson #2 -- AI driven campaigns increase volume & repetition of content which can create familiarity-based trust cues while also increasing suspicion of over-manufactured content

Both the Yas Island Abu Dhabi/Pickyourtrail example illustrates the use of an AI-persona in storytelling about tourism experiences, and the Unilever example demonstrates the potential for scaled asset creation/reuse. However, similar to all other forms of automation/content creation tools, there is still a need for governing AI-driven influencer marketing practices to establish reasonable expectations about content authenticity/authenticity disclosure/boundaries.

Lesson #3 -- Governance requirements remain central to achieving desired trust outcomes

Blockchain audit initiatives have shown value when clearly established rules regarding access to evidence and participation in audits are defined. Similarly, AI-driven influencer marketing practices demonstrate value when clear disclosures are made, rules regarding acceptable enhancements are defined internally within organizations, and clear sponsorship disclosure is provided in high-stakes categories.

Governance

Exposure levels on social media determine the degree of persuasion experienced by consumers. Algorithmically ranked content can also increase concentrations of persuasive messages. Therefore, ethical Governance guidelines include requiring Platforms to support effective disclosure mechanisms and consistently labelling sponsored content. Additionally, Platforms should offer their customers ways to limit exposure to unwanted sponsored content and understand major factors influencing recommendation algorithms. Accountability for AI-generated content is also critical. If Platforms label AI-generated or AI-altered content, then labels must be consistent and easily understandable. If they do not label such content, consumers may formulate incorrect beliefs about whether they see real-world representations versus AI-generated representations of reality. Incorrect assumptions could potentially lead to increased harm in areas like travel, healthcare, and finance. Finally, Governance should consider verifying claims of third-party verified disclosure. If a platform offers a "verified disclosure" badge based upon blockchain record keeping, then clearly articulated rules must exist to identify who issued the badge and what processes were followed in order to verify disclosure. Furthermore, clearly articulated rules must exist that govern corrections if an error occurs. Otherwise, badges can serve solely as additional marketing signals rather than accountability mechanisms [39].

8. RESEARCH GAPS AND FUTURE RESEARCH DIRECTIONS

8.1 Measurement and evaluation gaps

Lack of consistency among researchers regarding definition of key concepts; trust has been defined as credibility, trustworthiness, and authenticity, while studies have used both single score of trust and honesty and expertise and benevolence. The lack of consistency limit's ability to synthesize findings and compare them across different research contexts.

Research about blockchains (e.g. blockchain-based transparent disclosure) has also had its own set of inconsistencies. Some studies have described disclosure-proof design, but did not assess consumer's perception of it. Others assessed consumer's perception of it without giving consumers an opportunity to see the verification cue.

In order to improve this situation, future researchers should agree upon common reporting standards. Researchers measuring trust should clearly define the sub-dimensions they are assessing. Researchers assessing purchase intentions should clearly define the type of action being asked and the time frame of the action. Researchers examining artificial intelligence (AI) conditions should indicate if the mediation examined was based on exposure to AI or based on content generated from AI. Similarly, researchers examining blockchain conditions should indicate what is recorded on the blockchain and what information will be made available to consumers [40].

8.2 Gaps in scalability and feasibility

There is still a significant number of barriers associated with scalable solutions for transparent systems. Large influencer marketing campaigns can produce massive amounts of social media content including posts, edit history, and versioning. In a scenario where a system records all events on-chain, there could potentially be large costs and latencies. While permissioned systems reduce the cost of recording events, they require coordination and additional infrastructure. There are also limitations related to feasibility due to platform dependence. For example, proofs are usually dependent on platform-specific identifiers and labels, which means that API access can vary greatly depending on the platform, automated capture can be limited and identity binding can be highly sensitive to account takeovers and account transfers. Therefore, future research should evaluate batched proof aggregations with periodic anchoring designs. Additionally, researchers should provide real-world operational metrics related to cost per campaign, proof creation time, failure rates and support workload.

8.3 Gaps in privacy-preserving and fairness

Researchers frequently describe their privacy-protective designs in very high-level terms without evaluating these claims. Hash-based methods help protect user identities while reducing the likelihood of linking metadata to specific individuals, however hash-based methods do not eliminate the potential for linkage risk if metadata is publicly available. Using off-chain storage creates additional requirements for access control and data retention.

Future research should include evaluations of selective-disclosure techniques designed to limit the amount of exposed data. Future research should also investigate bias in reputation scoring systems and suggest ways to allow for appeals and audits.

8.4 Cross-platform and cross-market gaps

The vast majority of research is conducted within single-platform environments. Different platforms offer varying types of disclosure tools, feed logics, content formats etc., therefore the findings obtained in one platform environment cannot be assumed to be applicable in other environments. Also, markets vary in terms of acceptable levels of disclosure and regulatory intensity/privacy laws which affect generalizability. Cross-platform experimentation can demonstrate whether similar results can be found when the same content is delivered under controlled conditions across multiple platforms. Comparisons of market environments with differing levels of disclosure enforcement can be used to determine whether variations in consumer trust occur as well as clear reporting of relevant platform features and market context as part of study methodology.

8.5 Consumer outcomes in the long-term

The most significant gap in current knowledge is related to limited empirical evidence on long-term consumer outcome. Many studies focus on instantaneous attitude and intention immediately following exposure. Fewer studies track longer-term consumer purchase behaviour or repeated-exposure effects over time. Consumer trust can evolve over time - e.g. a negative experience with a purchased product may decrease a person's level of trust in a company. Consumer trust may also shift over time as consumers develop awareness of AI-generated content and/or as industry disclosure practices change.

Longitudinal designs can measure consumer trust levels as well as purchasing behaviours over extended periods (months). Such designs can also measure how repeated exposures to AI-mediated advertising affects persuasion-resistance (i.e. willingness to ignore subsequent advertising messages). Finally, such designs can measure whether blockchain-based verification cues create sustained confidence/trust in a brand or simply provides temporary reassurance.

9. CONCLUSION

This study looked at how AI and blockchain impact consumers' trust in influencer marketing. The literature indicates that an AI mediated feed impacts how exposed a consumer is to sponsored content as well as the degree to which they are familiar with it. While AI assisted content may make sponsored content look better (higher presentation quality), if a consumer suspects

that the content was edited too much or entirely automatically (i.e., the content was "AI created"), then their perception of the authenticity of the content will be lowered. Blockchain can help build trust for the sponsor of the influencer because blockchain provides disclosure proof, audit trail history, and has a higher level of evidence integrity than traditional methods of disclosure. However, this type of trust is contingent upon several factors including; clear identification (binding) of the parties involved, simple verification cues, cooperation from all platforms that have access to information about the influencer's posts and campaigns, and data privacy protections. In addition to the effects of AI and blockchain on the influencers, the literature suggests that consumer trust is influenced by many other variables including; transparency (disclosure clarity) related to the nature of the relationship between the influencer and the brand (influencer expertise, product fit, relationship strength); social proof (e.g. peer reviews/endorsements); and campaign design. As such, there are both opportunities and risks associated with using both AI and blockchain together to create greater accountability and transparency in influencer marketing. On one hand, AI can assist in creating more relevant and accessible sponsored content. On the other hand, opaque algorithms used by brands to track engagement levels and/or identify potential "bots" can reduce consumer trust as well as hidden sponsored content, weak disclosure practices, artificially generated engagement metrics, and violations of consumer's right to privacy. Therefore, future research should attempt to validate these findings empirically (using longitudinal studies), across multiple platforms, and measuring actual changes in consumer behaviour over extended periods of time. Finally, this study concluded that improving trust in influencer marketing will require improvements in technology as well as clear regulations governing business practice, fair disclosure of sponsorship practices, and easily verifiable mechanisms for consumers to verify claims made by sponsors regarding their services.

AUTHOR CONTRIBUTIONS

Santosh: Conceptualization, Investigation, Formal Analysis.

Dr. Anita Goswami: Methodology, Laboratory Analysis, Supervision, Writing—Review & Editing.

Dr. Vasim Aahmad: Formal Analysis, Supervision

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ETHICS STATEMENT

Ethical approval was not required for this study.

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