

Volume 2, Issue 1, October 2026: DOI: <https://doi.org/10.5281/zenodo.22754953>. Article history:
Received: February 3, 2026; Revised: April 7, 2026; Accepted: June 30, 2026

Artificial Intelligence in Digital Agribusiness: A Content Analysis of Generative AI Skits and Agritech Narratives on TikTok and Instagram Reels

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Abstract

Background: The rapid convergence of short-form video platforms and generative artificial intelligence has reshaped digital agribusiness communication. While short-form video formats offer unprecedented algorithmic reach, empirical scrutiny regarding the thematic framing, narrative structures, and technical accuracy of generative agritech content remains limited.

Objective: This study investigated how generative artificial intelligence skits and agritech narratives are framed, depicted, and received across TikTok and Instagram Reels, evaluating dominant thematic frames, narrative tones, technical feasibility, and audience engagement metrics.

Methodology: A multimodal quantitative content analysis was conducted on a sample of 400 publicly accessible videos (200 from TikTok and 200 from Instagram Reels) published between January 2024 and December 2025. Data were coded using a non-adapted coding sheet covering narrative tone, agritech framing, sub-sector, feasibility, and engagement metrics. Inter-coder reliability was established via Cohen kappa (ranging from 0.81 to 0.92). Statistical evaluation utilised chi-square tests of independence, Kruskal-Wallis H tests, and post-hoc Dunn tests with Bonferroni corrections.

Result: Advisory and farm management emerged as the dominant thematic frame (40.5%), followed by labour substitution (25.8%), concentrated largely in arable farming (41.0%) and livestock production (28.0%). Significant platform differences emerged: TikTok heavily favoured comedic skits and satire (67.0%), whereas Instagram Reels favoured educational and promotional formats (55.0%). Exaggerated or fictional AI capabilities accounted for 58.0% of the corpus, with realistic depictions representing only 42.0%. Comedic and satirical tones drove significantly higher audience engagement across views, likes, comments, and shares than instructional tones. Furthermore, exaggerated AI representations generated significantly higher virality than realistic workflows. Narrative format operated independently of the depicted agribusiness sub-sector.

Conclusion: Short-form algorithmic video platforms serve as influential cultural conduits for modernising agricultural perceptions; however, their algorithmic architectures systematically prioritise comedic satire and exaggerated technical capabilities over realistic agronomic education. This attention-driven dynamic risks fostering distorted perceptions of digital agribusiness feasibility among emerging agripreneurs, highlighting the necessity for grounded, institutional extension engagement on visual social platforms.

Keywords: Artificial intelligence, Digital agribusiness, Content analysis, Generative AI, TikTok, Instagram Reels, Algorithmic communication

Introduction

The rapid convergence of digital communication platforms and frontier technologies has introduced a new paradigm in digital agriculture and agripreneurship. Traditionally conceptualised through on-farm precision hardware, remote sensing, and automated machinery, the agricultural technology (agritech) landscape is increasingly shaped by how agricultural knowledge, innovation, and entrepreneurial practices are mediated, framed, and disseminated across digital ecosystems (Bello, 2024; Fuentes-Peñailillo et al., 2024). Modern agribusiness no longer operates in isolation from public digital discourse; instead, it relies on diverse communication networks to foster technological adoption, reframe youth perceptions of farming, and communicate innovations across agricultural value chains (Bhat et al., 2025; Ganeshkumar et al., 2023).

Central to this transformation is the rise of short-form video platforms, particularly TikTok and Instagram Reels, which have emerged as primary cultural conduits for digital storytelling, algorithmic reach, and knowledge exchange. Concurrently, advances in artificial intelligence (AI), especially generative AI models and synthetic content generation tools, have reshaped frontline

content creation (Chamara et al., 2026; Zhang & Yadav, 2025). Rather than relying solely on formal extension bulletins or traditional peer-to-peer visual channels, digital creators, agribusiness practitioners, and agripreneurs deploy generative AI skits, humorous dramatised narratives, and algorithmic visual media to depict modern farming dilemmas, technological tools, and market opportunities. These short-form creative narratives serve as informal interfaces that translate technical agro-ecological principles into relatable, viral content, effectively functioning as vernacular advisory and engagement mechanisms (Singh et al., 2026; Wang & Huang, 2025).

Despite the rapid proliferation of generative AI skits and creative agritech representations across visual platforms, empirical scrutiny regarding their conceptual framing, narrative structures, and practical representations remains scarce. While early visual methodologies established that participatory and community-generated video formats carry nuanced messages about farming realities and farmer agency across emerging contexts (Kwapong et al., 2024; Snyder et al., 2019), algorithmic short-form platforms remain under-researched. The algorithmic curation and entertainment orientation of TikTok and Instagram Reels risk oversimplifying complex agronomic decision-making, trivialising structural bottlenecks, or generating unrealistic representations of agribusiness viability (Balasooriya & Sedera, 2025; Cavazza et al., 2023).

This study addresses this scholarly gap by conducting a content analysis of generative AI skits and agritech narratives published on TikTok and Instagram Reels. By examining narrative portrayals, technical framing, and thematic constructions, the investigation clarifies how generative AI content shapes contemporary understandings of digital agribusiness, identifying both the persuasive potential and representational risks embedded within viral agricultural media.

Literature Review

Conceptual Evolution of AI in Digital Agriculture and Value Chains

The application of artificial intelligence to the agricultural sector was historically defined by deterministic computational modelling, predictive yield algorithms, and integration with the Internet of Things (IoT) for sensor-driven farm automation (Subeesh & Mehta, 2021; Zhou & Chen, 2023). Early scalable frameworks highlighted the technical potential of cloud-based data aggregation and machine learning pipelines to optimise resource efficiency and map farm-level input factors under constrained arable conditions (Chaterji et al., 2020). As digital agricultural infrastructure matured, the operational focus broadened from isolated farm-gate monitoring to holistic supply chain coordination, where AI and smart sensing architectures supported inventory logistics, traceability, and market predictive analytics across the broader agricultural value chain (Fuentes-Peñailillo et al., 2024; Ganeshkumar et al., 2023).

Within modern agribusiness management, AI adoption has triggered fundamental shifts in operational strategies and enterprise design (Bhat et al., 2025; Cavazza et al., 2023). Scholars observe that digitisation and algorithmic integration are not merely mechanical upgrades; they require new business models, revised managerial capabilities, and novel stakeholder engagement methods (Balasooriya & Sedera, 2025; Bello, 2024). In their structured assessment, Cavazza et al.

(2023) demonstrated that AI serves as a catalyst for value creation, facilitating new enterprise structures in food production and distribution. Nevertheless, institutional constraints, technical readiness, and managerial misalignments frequently hinder equitable technological deployment, reinforcing the need to understand how agricultural innovations are communicated to end-users (Balasooriya & Sedera, 2025; Bhat et al., 2025).

Generative AI as an Intermediary and Decision Support Interface

The emergence of generative AI architectures, particularly large language models (LLMs) and synthetic image and video engines, represents an interface shift in agricultural communication. Unlike conventional predictive models that output rigid data points, generative models allow users to converse in natural language, ask open-ended questions, and obtain contextual guidance (Zhang & Yadav, 2025). In a recent case evaluation of row crop production, Chamara et al. (2026) evaluated the agronomic competence of ChatGPT in executing tactical farming decisions, demonstrating that while conversational engines exhibit impressive baseline fluency, their lack of empirical field grounding and situational calibration presents tangible decision-making risks.

To overcome these constraints, researchers highlight the importance of contextual prompt engineering and human feedback mechanisms. For instance, Wang and Huang (2025) proposed user-contextual linguistic workflows to optimise generative design interfaces for rural demographics, illustrating that prompt architecture determines the utility and accessibility of generated agricultural solutions. Furthermore, applying reinforcement learning from human feedback (RLHF) has emerged as an essential pathway for localising generative agricultural guidance, ensuring that synthetic outputs align with local agro-ecological contexts and verifiable agronomic principles (Singh et al., 2026). When calibrated appropriately, generative AI moves beyond technical decision support to serve as an accessible intermediary that bridges technical scientific data and popular agricultural comprehension (Zhang & Yadav, 2025).

Visual Media, Participatory Narratives, and Algorithmic Dissemination

The mediation of agricultural practice through visual narrative has deep pedagogical and developmental roots. Participatory video methodologies across African contexts have long demonstrated that community-produced visual narratives provide a voice to rural practitioners, surfacing critical hidden messages regarding local expertise, resource constraints, and indigenous adaptations that top-down development agencies frequently overlook (Snyder et al., 2019). Similarly, Kwapong et al. (2024) documented how participatory video interventions in Ghana fostered peer-to-peer knowledge exchange, empowering farmers to articulate their authentic lived experiences with climate-smart farming techniques. In both instances, visual media served not merely as a passive medium, but as an active tool of agency, framing agricultural practice through culturally embedded, peer-validated narratives.

The rapid migration of visual storytelling to algorithmic platforms like TikTok and Instagram Reels alters this dynamic. On these platforms, visual production is governed by viral attention economies, algorithmic recommender loops, and creative humour, frequently manifested in short

dramatised skits. When combined with generative AI tools that automate character rendering, voice generation, and comedic scripting, agricultural communication shifts from conventional extension training to entertaining digital agritech narratives. While these digital skits democratise engagement, capture youth attention, and promote agripreneurial identities (Bello, 2024), their comedic and abbreviated format may foster skewed representations of technical feasibility, financial returns, and operational risks. Systematically analysing the manifest and latent themes within this burgeoning content stream is critical for evaluating how algorithmic social media influences public and entrepreneurial perceptions of the digital agribusiness sector.

Objectives of the Study

The broad objective of this study was to examine how generative artificial intelligence skits and agritech narratives are framed, depicted, and received across short-form algorithmic video platforms, specifically TikTok and Instagram Reels.

The specific objectives were to:

1. Identify the dominant thematic frames employed in generative AI skits and agritech narratives across TikTok and Instagram Reels.
2. Determine the primary narrative styles and tones utilised in depicting AI tools and digital agribusiness practices.
3. Examine the specific types of generative AI applications and agribusiness sub-sectors represented in the videos.
4. Evaluate the technical accuracy and feasibility portrayed in the depiction of AI capabilities versus sensationalised or satirical representations.
5. Assess the relationship between narrative framing and user engagement metrics (views, likes, comments, and shares) across both platforms.
6. Compare differences in content attributes, narrative styles, and audience engagement between TikTok and Instagram Reels.

Hypotheses

- H1: There is a statistically significant difference in the dominant narrative tone of generative AI agritech videos between TikTok and Instagram Reels, with TikTok exhibiting a higher prevalence of satirical and comedic skits.
- H2: Videos employing satirical or comedic narrative framing generate significantly higher audience engagement metrics (likes, comments, and shares) than videos employing informational or instructional framing.
- H3: Videos portraying exaggerated or technically inaccurate generative AI capabilities generate significantly higher virality (view counts and shares) than videos depicting realistic agricultural workflows.
- H4: There is a statistically significant association between the depicted agribusiness sub-sector and the chosen visual narrative format across both platforms.

Methodology

Research Design

This study employed a quantitative and qualitative content analysis design to systematically examine the thematic framing, narrative structures, and representation of generative artificial intelligence (AI) within digital agribusiness content published on TikTok and Instagram Reels. Content analysis was selected because it provided an objective, systematic, and replicable empirical technique for quantifying manifest communication content and interpreting latent symbolic meanings across multimodal social media artefacts.

Sampling Technique and Selection Criteria

The sampling frame comprised publicly accessible short-form vertical videos posted on TikTok and Instagram Reels between 1 January 2024 and 31 December 2025. This observation window captured the surge in consumer-accessible generative AI tools and the corresponding rise in algorithmic agritech content creation.

Data retrieval was conducted using a two-stage purposive sampling technique based on targeted hashtag strings and keyword parameters. The search strategy combined technology, format, and agricultural descriptors:

- Technology and format keywords: #GenerativeAI, #AIFarming, #AISkit, #ChatGPTFarming, #AICoach, #SmartAgriSkit, #AgriReels, #FarmTok.
- Agricultural domain keywords: #DigitalAgribusiness, #Agripreneur, #Agtech, #ModernFarming, #CropMonitoring, #LivestockManagement.

To ensure sample relevance and analytical validity, videos were evaluated against explicit inclusion and exclusion criteria: Inclusion criteria:

- Content was presented in vertical video format on TikTok or Instagram Reels.
- The primary narrative focus explicitly integrated artificial intelligence concepts, generative AI tools, or algorithmic decision-support with agribusiness, farming operations, or agricultural marketing.
- Spoken audio or textual subtitles were delivered in English, Pidgin English, or vernacular accompanied by English closed captions.
- Complete public metadata (caption, upload date, play count, likes, comments, and shares) was accessible. Exclusion criteria:
- Commercial product advertisements were uploaded directly by corporate enterprise accounts without narrative, comedic, or instructional skit framing.
- Duplicated or cross-posted videos originated from identical creator accounts across both platforms (retained only on the platform where the video achieved the earliest timestamp).
- Video clips lacked audio, contained severe audio corruption, or were deleted during the analytical coding phase.

From an initial pool of 742 retrieved video entries, 400 unique posts (200 from TikTok and 200 from Instagram Reels) met all inclusion filters and were archived for final coding.

Unit of Analysis

The primary unit of analysis was the individual video post in its multimodal entirety. Coding accounted for three interrelated semiotic layers:

- Visual track: Character staging, visual props, algorithmic filters, synthetic or AI-generated avatars, and on-screen overlaid text.
- Audio track: Spoken dialogue, voiceover narrations, automated text-to-speech engines, and background trending audio.
- Metadata and textual descriptions: Accompanying captions, embedded hashtags, pinned creator comments, and quantitative audience engagement metrics (views, likes, comments, and shares).

Coding Scheme and Operationalisation of Variables

A structured, non-adapted coding sheet was developed to operationalise the variables corresponding to the empirical research questions and hypotheses:

- Platform Metadata: Recorded the platform identity (TikTok vs Instagram Reels), video duration in seconds, creator typology (individual agripreneur, entertainment skit creator, agricultural educator, technology enthusiast), and engagement metrics (view count, like count, comment volume, share volume).
- Dominant Narrative Tone: Captured the prevailing tonal disposition of the video, classified into:
 - Satirical / Parody: Exaggerated caricature of farming dilemmas or robotic capabilities designed primarily to evoke laughter.
 - Comedic Skit: Humorous dramatisation grounded in relatable, everyday agribusiness scenarios.
 - Instructional / Educational: Didactic exposition demonstrating functional steps or practical workflows.
 - Promotional / Inspirational: Upbeat narratives framing digital agribusiness as an effortless pathway to rapid wealth or entrepreneurial status.
 - Cautionary / Alarmist: Dystopian or sceptical framing highlighting crop failure, data exploitation, or algorithmic error.
- Thematic Agritech Frame: Captured the primary context of AI application, operationalised as:
 - Advisory and Farm Management: Diagnostic decision support for pest detection, fertiliser application, or weather forecasting.
 - Market Linkages and Trade: Price discovery, digital marketplaces, customer negotiation, and supply-chain logistics.

- Labour Substitution and Automation: Depiction of AI displacing manual fieldwork, farmworkers, or traditional agronomists.
 - Entrepreneurial Financing: Securing agricultural credit, grant proposals, and investor pitches using generative models.
- Technical Feasibility and Portrayal Accuracy: Captured the fidelity of portrayed AI functionalities against contemporary real-world computational capabilities, categorised as:
 - Realistic / Actionable: Plausible prompts, recognised LLM capabilities, or grounded computer vision outputs.
 - Speculative / Exaggerated: Ascribing sentient, infallible, or technically impossible competencies to current generative AI tools without qualification.
 - Purely Fictional / Absurdist: Intentionally nonsensical applications deployed purely for entertainment effect.
- Depicted Agribusiness Sub-sector: Categorised into arable crop farming, livestock and poultry production, horticulture, aquaculture, agro-processing, or general input supply.

Inter-Coder Reliability and Pilot Testing

Coding was conducted by two independent coders with postgraduate backgrounds in agricultural communication and media studies. Prior to formal data capture, both coders completed a structured training workshop to standardise interpretive criteria across all nominal categories.

A pilot reliability assessment was executed on a random subsample of 40 videos (10% of the corpus), drawn outside the final analytical sample. Inter-coder agreement was calculated using ReCal to compute Cohen's kappa across all categorical variables. High inter-coder reliability was confirmed across all dimensions:

- Narrative tone: Cohen's kappa = 0.88
- Thematic agritech frame: Cohen's kappa = 0.84
- Technical feasibility portrayal: Cohen's kappa = 0.81
- Depicted agribusiness sub-sector: Cohen's kappa = 0.92
- Creator typology: Cohen's kappa = 0.86

Discrepancies identified during the pilot phase were deliberated alongside an external adjudicator until full operational consensus was achieved. Following standardisation, the remaining 360 videos were coded independently.

Data Analysis

Quantitative data derived from the coding schedule were cleaned and evaluated using IBM SPSS Statistics (Version 28):

- Descriptive Statistics: Frequencies, percentages, means, and standard deviations were generated to profile dominant narrative frames, sub-sectors, and platform-specific metrics.

- Chi-Square Tests of Independence: Applied to evaluate cross-tabulations between categorical variables, specifically testing associations between platform choice, narrative tone, agribusiness sub-sectors, and technical accuracy (H1 and H4).
- Inferential Non-Parametric Tests: Due to the characteristic positive skewness of social media engagement distributions, Mann-Whitney U tests and Kruskal-Wallis H tests were used to evaluate differences in engagement metrics (views, likes, comments, and shares) across narrative tones, feasibility categories, and platforms (H2 and H3). Post-hoc pairwise comparisons were conducted using Dunn test with Bonferroni corrections.
- Qualitative Multimodal Thematic Explication: Salient visual tropes, dialogue patterns, and algorithmic representations were qualitatively contextualised to corroborate the statistical findings.

Results

The analysis evaluated 400 unique video posts, evenly distributed across TikTok (n = 200) and Instagram Reels (n = 200).

Thematic Frames and Sub-Sector Representation

Advisory and farm management emerged as the dominant thematic agritech frame across the combined sample, followed by labour substitution and automation. Arable crop production and poultry/livestock management constituted the majority of depicted agricultural domains.

Table 1: Distribution of Thematic Agritech Frames and Depicted Sub-Sectors Across Platforms

Variable	Category	TikTok (n = 200)	Instagram Reels (n = 200)	Total (N = 400)	Percentage (%)
Thematic Frame	Advisory & Farm Management	74	88	162	40.5
	Labour Substitution & Automation	62	41	103	25.8
	Market Linkages & Digital Trade	38	46	84	21
	Entrepreneurial Financing & Grants	26	25	51	12.7
Agribusiness Sub-Sector	Arable Crop Farming	86	78	164	41
	Livestock & Poultry Production	58	54	112	28
	Horticulture & Greenhouse Farming	24	36	60	15

	Agro-Processing & Value Addition	18	20	38	9.5
	Input Supply & Distribution	14	12	26	6.5

Narrative Tone and Platform Differences

Comedic and satirical framing accounted for over half of the analysed content, though tonal distribution varied substantially by platform.

Table 2: Dominant Narrative Tone of Videos by Platform

Dominant Narrative Tone	TikTok (n = 200)	Instagram Reels (n = 200)	Total (N = 400)	Percentage (%)
Comedic Skit	78	44	122	30.5
Satirical / Parody	56	28	84	21
Instructional / Educational	32	68	100	25
Promotional / Inspirational	22	42	64	16
Cautionary / Alarmist	12	18	30	7.5

To test H1, a chi-square test of independence was performed between hosting platform and dominant narrative tone. The association was statistically significant, $\chi^2(4, N = 400) = 38.64, p < .001$. TikTok exhibited a significantly higher proportion of satirical and comedic skit formats (67.0%) relative to Instagram Reels (36.0%), whereas Instagram Reels leaned towards instructional and promotional framing. Thus, H1 was supported.

Technical Feasibility and Portrayal Accuracy

Evaluation of technical accuracy revealed that less than half of the corpus presented realistic representations of generative AI tools. Speculative and absurdist depictions dominated entertainment-led skits.

Table 3: Technical Feasibility and Portrayal Accuracy of Generative AI by Platform

Feasibility Category	TikTok (n = 200)	Instagram Reels (n = 200)	Total (N = 400)	Percentage (%)
Realistic / Actionable	64	104	168	42

Speculative / Exaggerated	88	66	154	38.5
Purely Fictional / Absurdist	48	30	78	19.5

A chi-square test examining the relationship between the depicted agribusiness sub-sector and the visual narrative format (H4) yielded no statistically significant association, $\chi^2(8, N = 400) = 11.23$, $p = .189$. Narrative format selection operated independently of the specific agricultural sub-sector portrayed. Thus, H4 was not supported.

Audience Engagement Metrics

Due to severe positive skewness in social media engagement distributions, non-parametric tests were utilised to compare engagement across categories.

Table 4: Median Audience Engagement Metrics Across Dominant Narrative Tones

Narrative Tone	Median Views	Median Likes	Median Comments	Median Shares
Comedic Skit	48,200	3,850	312	540
Satirical / Parody	62,400	4,910	468	812
Instructional / Educational	14,300	1,120	84	126
Promotional / Inspirational	18,900	1,480	105	164
Cautionary / Alarmist	21,500	1,640	198	275

A Kruskal-Wallis H test evaluated differences in audience engagement across narrative tones (H2). Significant differences emerged across all metrics:

- View count: $H(4) = 84.12$, $p < .001$
- Like count: $H(4) = 79.56$, $p < .001$
- Comment volume: $H(4) = 68.31$, $p < .001$
- Share volume: $H(4) = 91.44$, $p < .001$

Post-hoc pairwise comparisons via Dunn test with Bonferroni adjustments confirmed that satirical parodies and comedic skits accrued significantly higher views, likes, comments, and shares than instructional or promotional videos ($p < .001$). Consequently, H2 was supported.

To test H3, engagement metrics were compared across technical feasibility classifications. A Kruskal-Wallis H test indicated significant disparities in view counts, $H(2) = 46.18$, $p < .001$, and share volumes, $H(2) = 52.73$, $p < .001$. Videos featuring speculative or exaggerated AI capabilities

attained a higher median view count (54,100) and share volume (680) compared to realistic portrayals (median views: 16,800; median shares: 145). Post-hoc tests established that exaggerated portrayals drove significantly greater virality than realistic workflows ($p < .001$). Therefore, H3 was supported.

Discussion

The empirical findings from this investigation offer critical insights into how generative artificial intelligence is conceptualised, performed, and received within contemporary digital agribusiness ecosystems. By systematically interrogating short-form algorithmic video artefacts across TikTok and Instagram Reels, this study demonstrates that while public engagement with digital agribusiness is expanding rapidly, its online mediation is governed by entertainment-oriented framing, speculative technical depictions, and platform-specific algorithmic pressures. Rather than serving purely as educational conduits for agricultural extension, short-form video platforms function as hybrid communicative arenas where viral engagement loops frequently eclipse technical precision.

Advisory and farm management emerged as the dominant thematic focus of the analysed corpus, accounting for 40.5% of the sampled content. This marked concentration reflects an escalating interest in positioning conversational artificial intelligence, synthetic text generators, and automated diagnostic agents as accessible interfaces for farm-level decision support. Conceptually, this aligns with the observations of Zhang and Yadav (2025), who identified generative AI architectures as intuitive intermediaries capable of translating intricate computational workflows into accessible, interactive guidance for primary producers. Modern agripreneurs increasingly turn to conversational systems to navigate the complexities of precision farming, pest management, and input scheduling without requiring specialised computer science training (Fuentes-Peñailillo et al., 2024; Subeesh & Mehta, 2021).

Nevertheless, the qualitative and manifest characteristics of these digital skits revealed a stark divergence from empirical field applications. In realistic agronomic settings, foundational AI models and large language models encounter severe operational hurdles, including hallucinated recommendations, lack of geographic context, and insufficient calibration to local soil and climatic parameters (Chamara et al., 2026). As Chamara et al. (2026) established in their case study on row crop management, ChatGPT and related generative models demonstrate fundamental deficiencies in executing high-stakes agronomic decisions without rigorous human oversight. In stark contrast, the sampled skits tended to gloss over these boundary conditions, frequently presenting AI chatbots as infallible oracles capable of delivering instantaneous, error-free farming directives. This discrepancy illustrates the persistent gap between algorithmic spectacle and the structural, data-intensive realities of digital agriculture highlighted across scalable implementation frameworks (Chaterji et al., 2020; Zhou & Chen, 2023).

The support found for H1 highlights profound platform-driven disparities in how agricultural innovation is dramatised. TikTok exhibited an overwhelming preference for comedic skits and satirical parodies (67.0%), whereas Instagram Reels leaned visibly towards instructional

demonstrations (34.0%) and promotional narratives (21.0%). This structural divergence mirrors the cultural and algorithmic architectures of both environments. TikTok operates primarily within a vernacular logic driven by remixing audio tracks, satirical dramatisation, and rapid meme lifecycles designed to retain short-span viewer attention. Instagram Reels, conversely, remains tethered to personal branding, curated lifestyle aesthetics, and commercial agripreneurial visibility (Bello, 2024; Bhat et al., 2025). As Bello (2024) argued, modern agripreneurship leverages digital platforms to reposition agriculture as an aspirational, technologically advanced venture. On Instagram Reels, creators capitalise on these visual conventions to pitch enterprise viability, showcase high-tech farm setups, and attract investment capital, whereas TikTok creators deploy satirical caricature to critique or celebrate the everyday incongruities of agrarian life.

A crucial finding of this investigation lies in the validation of H2 and H3, establishing that comedic tones and exaggerated portrayals of generative AI capabilities drive significantly higher virality, likes, comments, and shares than realistic, instructional workflows. Videos featuring speculative functionalities, synthetic personas diagnosing entire crop fields in seconds, or talking animals interacting with robotic inputs accrued massive algorithmic reach. This phenomenon exposes a troubling tension within digital science communication: social media recommendation algorithms systematically reward sensationalism, hyperbole, and humour over sober technical education.

Historically, participatory visual methodologies were developed to empower rural communities, democratise local knowledge, and articulate authentic agrarian challenges (Kwapong et al., 2024; Snyder et al., 2019). Snyder et al. (2019) demonstrated that community video initiatives reveal critical hidden messages concerning indigenous expertise and institutional neglect across African farming landscapes. Similarly, Kwapong et al. (2024) documented how participatory video tools allow Ghanaian farmers to articulate genuine struggles with climate-smart technologies. In the contemporary algorithmic arena of TikTok and Instagram Reels, however, the participatory ethos is reshaped by attention metrics. Rather than centring the farmer as an authentic expert or illuminating genuine operational risks, creators frequently reduce digital agribusiness to a comedic punchline or an exaggerated spectacle.

This distortion carries direct implications for agricultural enterprise development and strategic technology adoption. Recent management scholarship emphasises that integrating AI into agribusiness is not a frictionless plug-and-play process; it requires strategic realignment, substantial capital investment, robust digital infrastructure, and comprehensive managerial adaptations (Balasooriya & Sedera, 2025; Cavazza et al., 2023). Balasooriya and Sedera (2025) observed that agribusiness leaders encounter acute managerial hurdles when aligning emerging technologies with broader sustainability and productivity targets. Furthermore, the economic restructuring of agricultural value chains through artificial intelligence requires sophisticated coordination among producers, processors, and logistics networks (Cavazza et al., 2023; Ganeshkumar et al., 2023). When short-form content trivialises these structural hurdles by depicting generative AI as an effortless, magic-bullet solution, it fosters unrealistic expectations among aspiring young agripreneurs. If novice practitioners enter the agricultural sector expecting instant algorithmic returns, only to confront data scarcity, high machinery costs, and variable agronomic feedback, disillusionment and business failure are likely outcomes.

Moreover, the technical feasibility analysis demonstrated that only 42.0% of the analysed corpus presented realistic, actionable applications of generative tools. Over half of the content comprised speculative or absurdist portrayals. While prompt engineering workflows tailored to agricultural needs are actively developing in technical scholarship (Wang & Huang, 2025), and reinforcement learning with human feedback (RLHF) is proving necessary to localise digital advisories (Singh et al., 2026), social media skits rarely capture these essential technical layers. As Singh et al. (2026) proved, AI-driven advisory tools cannot provide safe or viable guidance unless they are continually calibrated against human agronomic expertise and regional farming contexts. Similarly, Wang and Huang (2025) stressed that accessible interface design requires meticulous, context-sensitive prompt structures. The widespread circulation of ungrounded, speculative AI skits on viral media dilutes public awareness of these technical necessities, muddying the boundary between tangible computational tools and pure digital fiction.

Finally, the lack of support for H4, which evaluated the relationship between the depicted agribusiness sub-sector and the visual narrative format, indicates that narrative framing choices operate independently of the agricultural domain. Whether portraying arable crop cultivation, intensive livestock production, horticulture, or post-harvest processing, content creators applied comedic and exaggerated skit templates with equal frequency. This uniformity confirms that narrative architecture across short-form platforms is dictated primarily by the overarching logic of algorithmic entertainment rather than the technical nuances of specific agricultural disciplines. The desire to capture fleeting attention overrides domain-specific boundaries, ensuring that digital agribusiness content conforms to the visual tropes of viral social media.

Conclusion

This study investigated the manifest and latent dimensions of generative AI skits and agritech narratives across TikTok and Instagram Reels. The evidence reveals a bifurcated digital ecosystem: while these platforms democratise visibility and spark interest in digital agribusiness, their algorithmic reward structures heavily favour satirical exaggeration and speculative representations over grounded technical education. The pervasive depiction of artificial intelligence as an infallible, near-instantaneous solution trivialises the empirical complexities of farm-level decision-making and sustainable agribusiness management. While short-form video represents a powerful participatory tool for repositioning modern agriculture among younger demographics, its current manifestation prioritises entertainment virality over accurate knowledge transfer. Bridging the gap between engaging visual storytelling and rigorous agronomic guidance remains essential for fostering realistic digital agricultural literacy.

Recommendations

- Public agricultural extension agencies, faculties of agriculture, and research institutes should establish active production pipelines on TikTok and Instagram Reels. Rather than leaving short-form visual narratives entirely to entertainment creators, institutional actors should adopt creative, comedic, and relatable visual formats to deliver empirically validated advice and debunk common agritech misconceptions.

- Agritech start-ups and digital agribusiness enterprises should partner directly with established digital skit creators. Providing creators with authentic software tools, field-level demonstrations, and basic prompt engineering literacy will facilitate content that remains humorous and viral without distorting the operational realities of artificial intelligence.
- Higher education institutions and vocational agricultural training programmes should incorporate digital media literacy into their agribusiness curricula. Equipping aspiring agripreneurs to critically evaluate viral social media claims ensures that emerging farmers distinguish actionable algorithmic tools from exaggerated digital spectacles.
- Social media platform administrators should refine automated labelling systems for synthetic and generative AI content within agricultural and scientific categories. Clearly distinguishing satirical or fictional scenarios from genuine technical demonstrations will preserve information integrity without stifling creative parody.

Declarations

Ethical Approval: Ethical approval was not applicable, as this research relied on a content analysis of publicly available social media material and did not involve human participants, clinical trials, or animal experimentation.

Artificial Intelligence (AI) Use Statement: During the preparation of this work, the authors used Claude (Anthropic) to improve language, style, and clarity. Following the use of this tool, the authors thoroughly reviewed, edited, and verified the content, and take full responsibility for the final intellectual integrity of the publication.

Data Availability Statement: The datasets generated and analysed during the current study are available from the corresponding author upon reasonable request.

Funding Statement: The authors did not receive any specific grant or financial support from funding agencies in the public, commercial, or not-for-profit sectors for this study.

Conflict of Interest: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Authors' Contributions: O. O. Osuafor conceived the study, designed the content analysis framework, coordinated data collection, and drafted the original manuscript. F. U. Okoye contributed to the development of the coding scheme, data validation, and the analysis of agricultural extension narratives. E. U. Nwachukwu contributed to data curation, literature synthesis, and the critical evaluation of agribusiness communication dynamics. All authors contributed to the critical revision of the text and approved the published version of the manuscript.

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