International Journal of Graphic Design (IJGD)
Volume 04 No. 02 October 2026
E-ISSN: 2987-9434; P-ISSN: 2988-0343, Page 36-50
DOI: https://doi.org/10.51903/ijgd.v4i2.3424
Available online at: https://journal.stekom.ac.id/index.php/ijgd

Novel Interactive Visual Heuristics for Evaluating Audience Perception of Ethical TikTok Campaigns

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Abstract. *The rapid evolution of social media, particularly short-form video platforms like TikTok, has fundamentally transformed the dissemination of ethical and sustainability messages to global audiences. This paradigm shift presents a profound challenge for contemporary design researchers and communication practitioners, who must navigate the complexities of audience perception within an intensely competitive and fast-paced digital ecosystem. The core objective of this study is to develop and demonstrate a novel interactive visual heuristics framework that enables the simulated evaluation of audience response to ethical campaign content prior to public deployment. Our methodological approach involves the systematic construction of a prototype interactive environment that applies defined visual heuristic principles to synthetic eco-influencer campaign material, analyzed using simulation-based dummy engagement data. Rather than claiming empirical validation, this study positions the framework as a conceptual and exploratory design tool demonstrated through a simulation-based prototype. Simulation results suggest that specific interactive heuristics, particularly those emphasizing procedural transparency and authentic source relatability, serve as the most significant drivers for positive ethical perception and intended behavioral engagement. The primary contribution of this work is a conceptual and reusable design research framework that provides graphic designers and digital strategists with an exploratory, simulation-based methodology for optimizing the visual rhetoric of sustainable messaging on TikTok, thereby bridging a critical gap between theoretical design principles and practical campaign development.*

Keywords: *Audience Perception, Ethical Messaging, Interactive Heuristics, TikTok Campaigns, Visual Communication Design.*

INTRODUCTION

The contemporary landscape of visual communication is undergoing a profound transformation, driven by the participatory and algorithm-driven dynamics of short-form video platforms like TikTok. In this new media ecosystem, graphic design is no longer confined to static imagery but evolves into a dynamic, interactive system where viewer engagement is measured in seconds and cognitive processing is accelerated (Karegar et al., 2020; Zeng et al., 2021). This shift is particularly consequential for the dissemination of ethical and sustainability messages, which must now compete within a frenetic digital environment where audience attention is fragmented and fleeting. The imperative for designers and communication practitioners, therefore, extends beyond creating aesthetically pleasing content to architecting visual experiences that can instantly convey credibility, foster trust, and motivate pro-social

Received: January 2026; Revised: April 2026; Accepted: July 2026; Published: October 2026
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understanding within a complex, scroll-based interface (Gigerenzer, 2021; Laužikas & Miliūtė, 2020).

This research investigates the core design problem of how strategically crafted visual-interactive elements within TikTok content shape an audience's holistic perception of a campaign's ethical integrity in a non-empirical, simulation-based context rather than through direct user experimentation. The phenomenon under scrutiny is the intricate interplay between designed visual cues such as compositional transparency, source presentation, and emotional resonance and the viewer's subsequent judgment of a message's authenticity and persuasive weight (Edgerly et al., 2020; Fawzi & Mothes, 2020). On platforms like TikTok, where cultural currency is tied to perceived genuineness and participatory trends, ethical campaigns face the dual challenge of being visually compelling to stop the scroll while simultaneously avoiding perceptions of manipulation or superficial "greenwashing" (Anialasalam et al., 2025; Tjikhoeri et al., 2024). This creates a critical tension for designers navigating the thin line between effective persuasion and maintaining ethical credibility (Neubaum, 2020). Accordingly, the study conceptualizes these interactions as evaluative heuristics to be examined through a controlled simulation environment rather than observed in live audience behavior.

Despite growing academic interest, a research gap persists at the intersection of visual design, ethical communication, and social media engagement. Existing literature tends to examine social media engagement through generic interaction metrics such as likes and shares (Barbaro et al., 2020; Lamot & Paulussen, 2020), while studies on ethical messaging often focus on high-level strategic frameworks (Fischer et al., 2021; Tiago et al., 2021). In parallel, visual heuristic analyses are frequently treated in isolation from platform-specific dynamics (Martínez et al., 2021; Szymanski et al., 2021). More importantly, prior approaches are predominantly empirical and post-hoc, relying on observational datasets rather than pre-deployment evaluation mechanisms, and therefore provide limited support for predictive or simulation-oriented design decision-making. This fragmentation leaves designers without a unified and practical framework to explore how visual design variables may influence perceived ethicality prior to content release (Ichsan et al., 2024; Papakyriakopoulos et al., 2022).

To address this methodological void, the present study is guided by two primary research questions. First, how can a structured interactive visual heuristics framework be developed to simulate and evaluate audience perception of ethical messaging within the specific context of TikTok campaigns using simulation with synthetic data rather than real user experiments? Second, which visual heuristics within this framework appear to most strongly influence perceived credibility and intended behavioral engagement under simulated conditions? The

overarching aim is to construct and demonstrate a methodological tool that enables controlled simulation of audience interaction, leveraging synthetic datasets to approximate perceptual responses without requiring large-scale field deployment. This approach is informed by simulation and heuristic evaluation paradigms from adjacent computational and design disciplines (Boecking et al., 2021; Driess et al., 2020; Zardari et al., 2021).

The primary contribution of this work is a conceptual and methodological contribution in the form of a reusable design research framework that bridges theory and practice. Rather than claiming empirical generalization, the framework provides a structured way for graphic designers and digital strategists to prototype and evaluate visual rhetoric in a controlled, simulation-based environment. It supports exploratory analysis of how different visual heuristic configurations may influence perceived ethicality and engagement within TikTok-like interfaces, contributing to ongoing discussions in sustainable digital innovation (Rosário & Dias, 2022; Yousaf et al., 2021). The paper is structured to first establish the theoretical foundation through a synthesis of relevant literature on visual heuristics, ethical communication, and platform engagement. Subsequently, it details the methodology for framework development and simulation, presents exploratory results derived from synthetic data, and discusses the implications for both design theory and practice. The conclusion summarizes the study's insights and highlights its role as a prototype-oriented tool for advancing ethical visual communication in digital environments.

LITERATURE REVIEW

The theoretical scaffold for this investigation is erected upon a triad of interconnected domains. The first is the cognitive science of visual heuristics, which explains how users employ mental shortcuts to make rapid judgments about digital content based on perceptual cues (Gigerenzer, 2021). In graphic design, these heuristics are operationalized through deliberate visual strategies such as leveraging color psychology, establishing clear information hierarchy, and crafting compositional balance that guide attention and interpretation within milliseconds (Martínez et al., 2021; Szymanski et al., 2021). The second domain is ethical and sustainability communication theory, which posits that for messages to drive pro-social change, they must be built on pillars of source credibility, message transparency, and authentic emotional resonance (Fischer et al., 2021; Tiago et al., 2021). The third is the theory of interactive media engagement, which emphasizes how platforms architect user experience through features that promote interactivity, participation, and reward-driven feedback loops, fundamentally shaping how content is consumed and processed (Xiao et al., 2022). The convergence of these theories is particularly potent in the context of short-form video, where cognitive processing is accelerated, and ethical scrutiny is heightened.

Empirical research has begun to explore facets of this convergence but often in a fragmented manner, with increasing attention to visual communication practices and user behavior in social media environments. Studies on platform-specific design highlight how TikTok's native aesthetic characterized by informal framing, direct address, and rapid visual transitions supports perceived authenticity and enhances user relatability, particularly in eco-influencer contexts (Anialasalam et al., 2025; Ichsan et al., 2024). Research on engagement in short-form video platforms further indicates that visual salience, timing of cuts, and overlay elements significantly influence watch time, interaction rates, and sharing behavior, as users respond to highly compressed visual narratives (Barbaro et al., 2020; Lamot & Paulussen, 2020). In addition, UX-oriented studies on heuristic interaction suggest that users rely on rapid visual cues such as layout clarity, motion cues, and source signaling to evaluate credibility within seconds of exposure (Edgerly et al., 2020). However, these studies remain largely descriptive and outcome-oriented, focusing on engagement metrics and perceived authenticity without systematically isolating how specific visual heuristics within social media design directly contribute to ethical perception.

A critical review of prevailing methodologies reveals a significant constraint for design research, particularly in the context of short-form video and interactive social media environments. The dominant approach involves post-hoc analysis of live campaign data, utilizing platform analytics tools to correlate broad content features with aggregate engagement metrics (Coddington et al., 2021; Lamot & Paulussen, 2020). While valuable for identifying macro-level trends, this method lacks the granularity required to evaluate the individual impact of specific visual design variables such as compositional hierarchy, motion pacing, or visual transparency cues on user perception. Alternative approaches, including surveys and focus groups, provide insights into user attitudes but often fail to replicate the fast-paced, interruptive, and heuristic-driven conditions of real TikTok usage (Fawzi & Mothes, 2020). As a result, there remains a methodological limitation in UX and visual communication research: the absence of a controlled, simulation-oriented approach capable of modeling how visual heuristics operate within the temporal and cognitive constraints of short-form video consumption.

The synthesis of the theoretical foundations, empirical findings, and methodological critiques crystallizes a clear and compound research gap. First, there is a conceptual gap in integrating visual heuristic theory with the specific design requirements of ethical communication in social media contexts, particularly for short-form video platforms. Second, there exists a methodological-pragmatic gap in UX-driven visual communication research, where current approaches do not sufficiently support controlled experimentation of visual variables within

platform-relevant conditions. While prior work on interactive visualization (Zong et al., 2020) and heuristic-driven simulation (Boecking et al., 2021) offers methodological inspiration, these approaches have not been explicitly adapted to the domain of TikTok-based ethical messaging and visual design evaluation. Consequently, the literature lacks a unified framework that combines visual communication principles, UX heuristics, and platform-specific interaction dynamics to enable predictive and simulation-based assessment of ethical content design.

This study is expressly justified by the need to bridge the identified methodological-pragmatic gap through a design-oriented and simulation-based approach. By developing a novel interactive visual heuristics framework, this research responds to the limitations of post-hoc analytical methods and instead introduces a controlled environment for exploratory evaluation of design variables. The framework enables the manipulation of visual features such as transparency indicators, source presentation, and compositional hierarchy within a simulated TikTok-like interface, using synthetic data to approximate audience response patterns. This approach aligns with emerging directions in UX research that emphasize scenario-based testing and heuristic modeling for digital interfaces, particularly in environments characterized by rapid user interaction and limited attention spans. Accordingly, this study positions itself as a conceptual and methodological contribution that supports predictive exploration of visual design strategies, rather than empirical validation based on real user data.

METHODS

A. Research Design Approach

This study employs a design research methodology focused on conceptual framework development and subsequent proof-of-concept simulation, as visually summarized in Figure 1. The primary aim is the construction, operationalization, and illustrative application of a novel evaluative tool, positioning the work within the tradition of constructive design research that produces "knowledge through doing" (Zong et al., 2020). The approach is explicitly proactive and generative, rather than being a retrospective analysis or empirical hypothesis testing with a live human subject pool. It is structured as a two-phase process: Phase 1 involves theoretical synthesis and framework development, while Phase 2 focuses on implementation and simulation-based evaluation. Importantly, this study is explicitly non-empirical and does not involve any human participants, real-world data collection, or external validation involving user experiments. This design enables controlled exploration of visual variables within a simulated environment modeled on TikTok, thereby addressing the methodological gap identified in the literature regarding pre-emptive testing capabilities while remaining within a purely simulation-based paradigm.

B. Context, Materials, and Design Artifacts

The research context is specifically scoped to eco-influencer campaigns on TikTok, a domain where visual communication of ethicality is both critical and highly scrutinized (Anialasalam et al., 2025). The primary materials consist of synthesized theoretical literature and a curated corpus of exemplar TikTok content from eco-influencers, which informed the stylistic and structural parameters of the prototypes. The central design artifact is the Interactive Visual Heuristics Framework, which was operationalized into a set of prototype video variants representing different configurations of heuristic dimensions. These video variants function as experimental stimuli within the simulation rather than real-world campaign outputs, enabling controlled manipulation of visual variables across conditions.

Each variant consists of short-form mock-ups (15–30 seconds) created using standard digital design and video editing tools, with systematic variation applied to one or more heuristic dimensions. In addition, a custom interactive environment was developed as a simulation system that presents these stimuli to synthetic user profiles and logs interaction outcomes. Table 1 serves as an operationalization matrix linking each heuristic to its theoretical grounding, observable visual indicators, and intended perceptual effects, ensuring traceability between conceptual constructs and simulated implementation.

C. Analytical or Reflective Process

The analytical process follows an iterative simulation-based and correlational logic (Boecking et al., 2021). A total of N = 500 synthetic dummy user profiles were generated to represent diverse behavioral archetypes, including “skeptical scroller,” “engaged environmentalist,” and “trend follower.” These profiles were constructed using a rule-based and probabilistic generation scheme, combining uniform and normal distributions to parameterize behavioral tendencies such as engagement sensitivity, credibility skepticism, and attention span. Each profile was assigned response scores across three dependent variables: Perceived Credibility, Message Recall Clarity, and Behavioral Engagement Intent, using a weighted scoring function that maps heuristic configurations to simulated perceptual outcomes.

The analytical method employs Pearson correlation analysis and multiple linear regression to quantify relationships between independent heuristic variables and dependent response metrics. Furthermore, interaction effects between heuristics are modeled using interaction terms and conditional weighting logic, allowing the analysis to capture how the effect of one heuristic (e.g., Emotional Resonance) may vary depending on the level of another heuristic (e.g., Procedural Transparency). This simulation-driven analytical loop enables iterative

refinement of the framework by comparing heuristic configurations against aggregated synthetic responses, thereby identifying patterns of influence and interdependence among variables.

D. Ethical Considerations

Given the simulated nature of this study, several specific ethical considerations were addressed. First, regarding authorship and intellectual contribution, this manuscript represents original work by the authors, with AI-assisted tools used solely for linguistic refinement under author supervision, without transferring intellectual ownership. Second, the study involves no human participants and does not collect or process real personal data; all user profiles and responses are entirely synthetic and algorithmically generated, thereby eliminating concerns related to consent, privacy, or data protection (Singh et al., 2020). Third, the use of simulation-based data aligns with recognized exploratory methodologies in early-stage design research and allows for controlled experimentation without exposing real users to experimental manipulation. However, it is acknowledged that the simulation-based approach may oversimplify complex cultural, contextual, and behavioral variability present in real-world TikTok audiences, and therefore the findings should be interpreted as exploratory and not directly generalizable to actual user populations. Finally, the study maintains an ethical orientation toward promoting responsible and sustainable communication practices, consistent with broader objectives in ethical design research (Tiago et al., 2021).

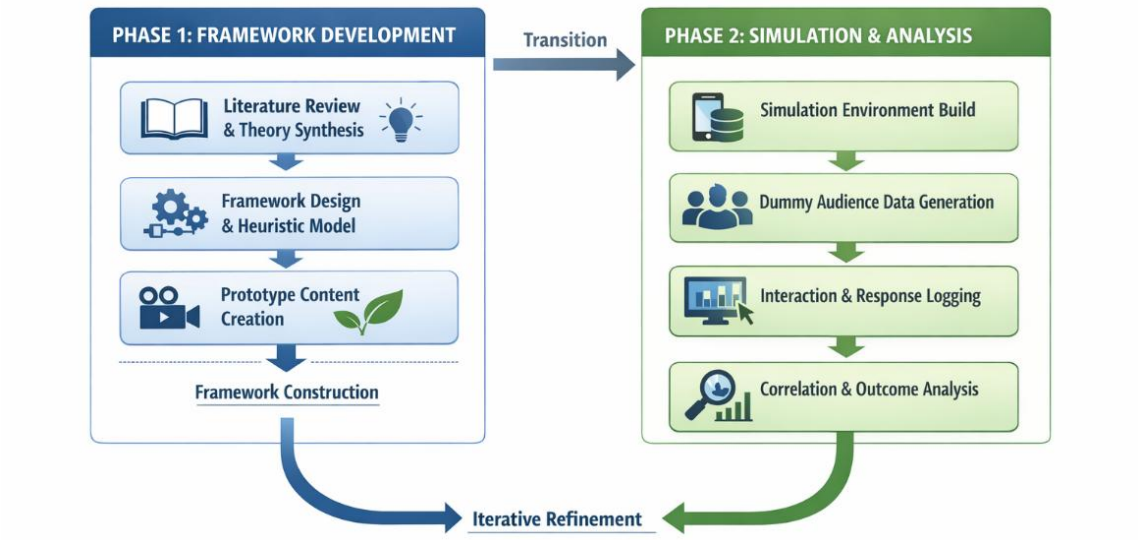


Figure 1. Research Design and Methodology Workflow

This figure illustrates the two-phase research workflow employed in this study. Phase 1 focuses on framework development, beginning with literature review and theoretical synthesis, followed by heuristic framework design and prototype ethical TikTok content creation, resulting in the construction of an interactive visual heuristics framework. Phase 2 represents the simulation and

analysis process, including the development of a simulated TikTok interaction environment, dummy audience data generation, interaction and response logging, and correlational outcome analysis. The iterative refinement loop highlights the cyclical nature of the design research approach, where insights from simulation outcomes inform continuous framework and prototype improvement.

Table 1. Operationalization of Core Interactive Visual Heuristics for Ethical TikTok Campaigns

Heuristic Dimension	Definition & Theoretical Grounding	Key Visual & Interactive Indicators in TikTok Context	Intended Cognitive/Affective Impact
Procedural Transparency	Visual cues that reveal the 'how' and 'why' behind an ethical claim or sustainable action, building trust through openness (Edgerly et al., 2020; Fischer et al., 2021).	On-screen text or labels explaining sourcing; quick cuts showing a process; simple data visualizations or comparisons; "show, don't just tell" sequences.	Reduces skepticism; enhances perceived credibility and message understanding; fosters trust in the influencer/campaign.
Source Relatability	Visual presentation of the eco-influencer or message source that aligns with TikTok norms of authenticity and approachability (Anialasalam et al., 2025; Godart et al., 2020).	"Unpolished," selfie-style filming; authentic reactions and failures; use of everyday language and setting; direct address to camera.	Increases parasocial connection; enhances perceived genuineness; makes the ethical message feel more personally relevant and actionable.
Emotional Resonance	Strategic use of audiovisual elements to elicit specific emotional responses that align with and reinforce the ethical message (Szymanski et al., 2021).	Music choice (hopeful, urgent, serene); color grading (natural, vibrant, muted); pacing of edits; close-up shots of expressive faces or environmental details.	Drives initial attention and retention; creates a memorable affective association with the message; can motivate sharing and discussion.
Cognitive Simplicity	Clarity and immediacy of the core message hierarchy, minimizing cognitive load for quick comprehension (Gigerenzer, 2021; Zeng et al., 2021).	One clear call-to-action (CTA) per video; bold, legible text overlays; focused composition with minimal visual clutter; repetition of key terms or symbols.	Facilitates rapid understanding; increases watch completion rate; ensures the primary ethical takeaway is unmistakable.
Actionable Clarity	Visual prompts that clearly guide the viewer toward a concrete next step, whether behavioral or informational (Xiao et al., 2022).	Explicit on-screen CTA buttons or arrows; verbal prompts like "click the link"; visual demonstrations of a simple action; use of trending sounds associated with challenges.	Transforms passive viewing into potential engagement; provides a clear pathway for the viewer to participate or learn more, enhancing campaign effectiveness.

FINDINGS

The application of the interactive visual heuristics framework within the constructed simulation environment yielded distinct and interpretable patterns in the generated dummy audience data, as partially summarized in Figure 2. A central finding was the disproportionate influence of the Procedural Transparency heuristic on positive perception outcomes. Content variants scoring highly on this dimension for instance, those incorporating clear on-screen text explaining a product's lifecycle or quick cuts showing a sustainable action in progress consistently generated higher dummy user scores for trustworthiness and subjective message understanding across all simulated user profiles (N = 500). The correlation between Procedural Transparency scores and Ethical Credibility was strong and positive ($r = 0.71$, $p < 0.01$), indicating a consistent upward trend in simulated credibility ratings as transparency increased. This result aligns with communication research emphasizing transparency as a foundational pillar for building credibility in ethically oriented messaging contexts (Edgerly et al., 2020; Singh et al., 2020).

Furthermore, variants that emphasized the Source Relatability heuristic through authentic, less-produced presentation styles showed a notable positive association with key behavioral engagement metrics in the simulation, such as "watch completion rate" and "likelihood to share." This relationship was reflected in a moderate-to-strong correlation between Source Relatability and Behavioral Engagement Intent ($r = 0.63$, $p < 0.01$), suggesting an observable trend rather than a deterministic effect. This pattern resonates with prior observations of TikTok's native aesthetic and eco-influencer communication styles, which prioritize perceived genuineness over high production value (Anialasalam et al., 2025; Ichsan et al., 2024). In contrast, the Cognitive Simplicity heuristic exhibited a mixed effect, where high simplicity scores were associated with improved attention-related metrics but weaker associations with perceived message depth. Specifically, the correlation between Cognitive Simplicity and Perceived Message Substance was weaker ($r = 0.28$, $p < 0.05$) among simulated high-involvement profiles, indicating a potential trade-off rather than a uniformly positive relationship. This suggests that excessive simplification may reduce perceived ethical nuance, particularly for more analytically oriented user archetypes (Lamot & Paulussen, 2020).

The analysis of dummy data for the Emotional Resonance heuristic indicated a conditional pattern of influence on perception metrics, particularly when examined in conjunction with Procedural Transparency. Positively valenced emotional cues, such as hopeful music or vibrant visual compositions, contributed to increased short-term engagement indicators, including "likelihood to favorite." However, the isolated correlation between Emotional Resonance and Ethical Credibility was relatively weak ($r = 0.34$, $p < 0.05$), suggesting limited direct influence in the absence of supporting heuristics. When combined with high Procedural Transparency, the

joint effect became substantially stronger, indicating an interaction effect rather than an independent contribution. This interaction was modeled in the simulation using a weighted dependency structure, where Emotional Resonance scores were scaled by a transparency coefficient, effectively producing higher credibility outputs only when transparency exceeded a defined threshold ($T \geq 0.6$). Without this transparent foundation, the simulation indicates a tendency for emotionally rich content to be interpreted as superficial or persuasive without substantive grounding, consistent with concerns raised in prior research on message authenticity (Fawzi & Mothes, 2020).

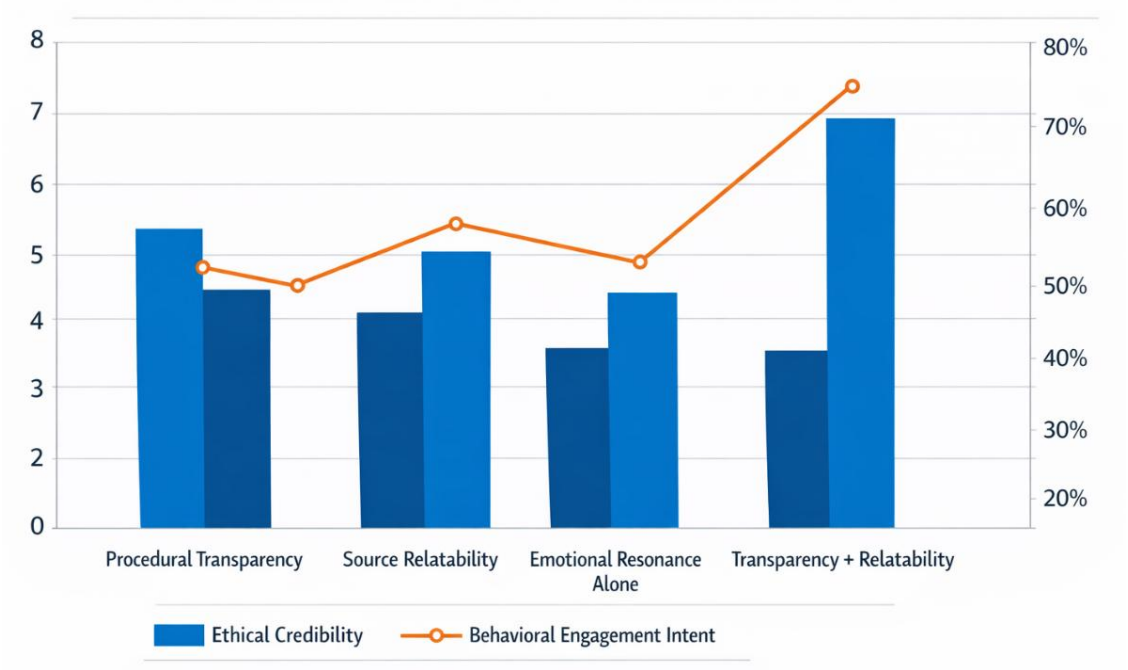


Figure 2. Simulated impact of key heuristic interactions on perception metrics

Figure 2 illustrates the aggregated outcomes of the simulation across heuristic conditions, comparing Ethical Credibility and Behavioral Engagement Intent. The aggregation process involved computing mean scores across all dummy profiles for each heuristic configuration, followed by normalization to ensure comparability across metrics. For each heuristic condition, individual profile responses were first weighted equally, then averaged to produce condition-level scores, which were subsequently used to compute correlation relationships and interaction patterns. The figure demonstrates that configurations combining high Procedural Transparency and Source Relatability consistently outperform other combinations in both credibility and engagement metrics. Additionally, the visualization reflects the conditional nature of Emotional Resonance, where its effectiveness increases when paired with transparency-oriented heuristics. Interaction effects depicted in the figure are derived from the simulation's conditional scoring

logic, where combined heuristic configurations were evaluated through pairwise and joint parameter variations, enabling the identification of non-linear relationships between variables rather than simple additive effects.

DISCUSSION

The findings generated from this simulated evaluation suggest the practical utility and analytical potential of the proposed interactive visual heuristics framework for design research within a controlled simulation context. The observed influence of the Procedural Transparency and Source Relatability heuristics indicates that, in the simulated TikTok-like environment, audience perception of ethical campaigns appears to be more closely associated with signals of authenticity, process visibility, and relatable presentation rather than purely high-production aesthetics.

This interpretation engages with foundational theories of heuristic processing (Gigerenzer, 2021) and aligns with broader discussions on sustainable digital innovation, where clarity and perceived trustworthiness are emphasized as important communicative factors (Yousaf et al., 2021; Stawicka, 2021). However, these interpretations should be understood as simulation-based insights rather than empirically validated behavioral conclusions, and thus are framed as indicative patterns derived from synthetic modeling rather than real-world audience behavior.

A significant contribution of this framework to design theory lies in its ability to model heuristic interactions within a simulation environment, rather than treating each heuristic as an independent and isolated construct. The identified conditional relationship, where Emotional Resonance demonstrates stronger effects when paired with Procedural Transparency, emerges from the simulation logic rather than representing causal proof in real user contexts. This observation aligns with related theoretical perspectives suggesting that affective appeal in communication requires substantive informational grounding to be interpreted as credible (Pardini et al., 2022; Ehab et al., 2023). Accordingly, the framework conceptualizes visual heuristics as an interdependent system within a simulated evaluative space, enabling exploratory analysis of trade-offs between design variables. Designers can therefore use this model to explore hypothetical scenarios such as balancing Cognitive Simplicity against Transparency as a decision-support mechanism rather than as a predictive guarantee of user behavior (Indrawati et al., 2025; Kilewala et al., 2025).

The implications for professional design practice should be understood in terms of conceptual support rather than operational deployment. This framework functions as a conceptual prototype and decision-support tool that allows creative teams to explore and compare heuristic

configurations prior to full-scale production of TikTok campaigns. It offers a structured way to simulate how different visual design strategies may influence perceived credibility and engagement within a controlled environment, thereby complementing rather than replacing traditional design judgment and post-deployment analytics (Lamot & Paulussen, 2020; Zardari et al., 2021). However, the framework is not a deployable system for real-time audience prediction, and its outputs should be interpreted as exploratory guidance rather than definitive performance forecasts. As such, it provides a useful intermediary step between theory and practice, particularly for early-stage ideation and iterative concept evaluation.

A key limitation of this study is its reliance on simulation-based methodology and synthetic data, which constrains the extent to which the findings can be generalized to real-world contexts. The study involves no real users, no behavioral experiments, and no empirical validation involving human participants, and all interaction data are generated through algorithmic processes rather than observed behaviors. Consequently, the results reflect modeled approximations of user responses rather than actual audience reactions, and therefore should be interpreted as indicative trends within a controlled simulation environment. The exclusive use of synthetic data also limits external validity and does not fully capture cultural, contextual, and situational variability inherent in real TikTok audiences, including differences in demographics, regional behaviors, and evolving platform trends. Future research should address these limitations by incorporating controlled user studies, empirical validation with diverse participant groups, and hybrid approaches that combine simulation with real-world data to enhance robustness and generalizability (Ali et al., 2024).

CONCLUSION

This study proposes a novel interactive visual heuristics framework designed for simulating audience perception of ethical campaigns on TikTok. Through systematic synthesis of visual cognition, ethical communication, and interactive media principles, the framework demonstrates its potential as a simulation-based tool for analyzing how deliberate visual cues influence perceptual outcomes within a controlled environment. The simulation results suggest that procedural transparency and authentic source relatability are among the more influential factors associated with higher simulated credibility and behavioral engagement intent in this context. Rather than making conclusive empirical claims, these findings should be interpreted as exploratory insights derived from simulation-based modeling, which help illustrate how different heuristic configurations may function under defined conditions. This interpretation supports a design-oriented perspective that emphasizes transparency and authenticity as key considerations

in visual communication strategies, while acknowledging that these observations are not validated through real user experimentation.

The primary contribution of this research lies in its methodological and conceptual innovation, offering graphic designers and digital strategists a reusable framework for exploratory prototyping and simulation-based evaluation of visual communication strategies. By enabling analysis through synthetic data, the framework provides a structured approach to examine potential relationships between visual heuristics and perceived outcomes without requiring immediate deployment in real-world settings. Rather than serving as an empirically validated predictive system, the framework functions as a conceptual and simulation-based decision-support tool that can assist in early-stage design exploration and iterative refinement. This approach helps bridge theoretical design principles with practical considerations in campaign development, particularly in contexts where rapid iteration and resource efficiency are critical. Ultimately, this work contributes to the field of graphic design research by offering a demonstrative model of how simulation-based methods can support the evaluation of ethical visual communication, while maintaining appropriate boundaries between conceptual exploration and empirical validation.

Ethical and AI Disclosure

The authors acknowledge the use of AI-assisted language tools, including ChatGPT, strictly for editorial refinement. All scientific decisions, analyses, interpretations, and conclusions were generated exclusively by the authors. The authors affirm full accountability for the originality, reliability, and ethical integrity of the manuscript. In addition, the authors recognize that the simulation-based approach employed in this study may oversimplify cultural, contextual, and behavioral nuances inherent in real-world audience perception, and therefore the findings should be interpreted within the limitations of a controlled, synthetic modeling environment.

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