An Analysis of Misclassification of "Products Not as Advertised" in AIGC Short-Video E-commerce Covers and Consumer Rights Violations

Jiang Chenyi
Visual Communication Design, School of Arts and Media, China University of Geosciences (Wuhan), Wuhan, Hubei Province, 430074, China
wauqjdvaswwt@163.com

ABSTRACT

AIGC is gradually being applied to the production of product cover images for short-video e-commerce, with the 'AI-generated + human-optimised' model becoming the mainstream approach. Whilst this technology lowers the cost barrier to content production, it also facilitates merchants' manipulation of product appearances, giving rise to technical and covert instances of 'products not matching descriptions'. Compared to traditional image distortions, misleading AIGC product covers are characterised by low cost, high realism, ease of mass production, difficulty in detection, and complex liability structures. These factors influence consumer perception and purchasing behaviour, constituting a complex issue where information accuracy, consumer rights and platform governance intersect. This paper takes such 'product mismatch' phenomena in cover images as its research subject. By comprehensively employing multiple research methods, it classifies types of cover image distortion, analyses the pathways through which consumer rights are infringed, establishes a logical chain linking 'AIGC technical characteristics–visual distortion in cover images–consumer cognitive bias–purchasing decisions–infringement of rights', and constructs a multi-stakeholder collaborative governance mechanism. The study aims to clarify the boundary between normal aesthetic enhancement and malicious falsification, thereby providing theoretical and practical guidance for the regulation of AIGC commercial visual content, the protection of consumer rights, and the governance of short-video e-commerce.

Keywords: AIGC; Short-Video E-Commerce; Product Covers; Products Not Matching Descriptions; False Advertising; Consumer Rights; Platform Governance

1. INTRODUCTION

1.1 Research Background

AIGC Drives Transformation in E-commerce Visual Content Production: AIGC has transformed the production methods for e-commerce product images and short video thumbnails. Compared to traditional photography and image editing, it enables the rapid production of finished content, thereby reducing production costs for merchants and accelerating content updates. Unlike Photoshop, which merely modifies existing images, AIGC can reconstruct various product attributes and even create products that do not exist in reality, elevating the visual presentation of products to a form of commercial communication with the capacity for reproduction. China has already introduced the *Interim Measures for the Administration of Generative Artificial Intelligence Services* and the *Measures for the Labelling of AI-Generated and Synthetic Content*, which set out regulatory requirements—such as labelling—for AIGC-generated content. This marks AIGC's entry into a phase of governance centred on content and social responsibility. However, in commercial contexts, AIGC possesses a dual nature: whilst it enhances design and production efficiency, its powerful generative capabilities can also easily lead to discrepancies between product visuals and the physical goods themselves.

1.2 The Role of Cover Images in Short-Video E-commerce

Short-video e-commerce is characterised by a 'visual-first' approach. As consumers typically scroll rapidly whilst browsing short videos, product covers play a crucial role in attracting attention, conveying product information and encouraging clicks.

Consequently, the consumer purchasing process can be simplified as follows:

Visual stimulus from the cover → Attention → Product perception → Interest → Click → Trust → Purchase

In this process, the product cover is not merely a decorative visual element, but a key source of information that contributes to the formation of the consumer's perception of the product. When the information on the cover deviates significantly from the actual product, the consumer's purchasing decision is effectively based on incorrect information.

1.3 The Origin of the 'Product Does Not Match the Advertisement' Issue

The 'product not as advertised' issue discussed in this paper does not refer to product quality issues in the simple sense, but rather to situations where consumers form a specific perception of a product based on short-video product covers generated or significantly modified by AIGC, only to discover—after purchasing and receiving the actual product—that there are marked discrepancies between the product's appearance, materials, structure, functionality, dimensions, colour or overall visual characteristics and those displayed on the cover, to an extent sufficient to influence their purchasing decision.

Consequently, this paper focuses on substantial discrepancies between visual information and the actual product.

1.4 Significance of the Research

1.4.1 Theoretical Significance

Most existing research on digital misinformation centres on traditional online false content, with a lack of discussion regarding AI-enabled visual misinformation. This study focuses on AIGC-generated false visual content in e-commerce contexts, elucidating the intrinsic links between content, algorithms, audience perception and consumer behaviour. It expands the scope of application for theories of digital misinformation and provides a new analytical paradigm for research into the effects of algorithmic media communication. Furthermore, existing theories of platform governance responsibility are tailored to traditional online environments and are unable to address new governance challenges posed by AIGC, such as intelligent fabrication and covert dissemination. Adopting a multi-regulatory perspective, this study analyses the boundaries of responsibility, shortcomings and operational logic of e-commerce platforms in governing AIGC visual disinformation. It clarifies the scope of various platform responsibilities in the AI era, enriches the theory of digital platform governance, and provides a theoretical framework for the development of responsibility systems on e-commerce platforms.

1.4.2 Practical Significance

(1) To protect the legitimate rights and interests of consumers in the short-video e-commerce sector. By elucidating the transmission mechanisms through which AIGC-generated 'product mismatches' affect audience perception, consumption decisions and the infringement of rights, this study provides a basis for consumers to identify AI-generated fraudulent product images and to substantiate claims when seeking redress;

(2) Regulate merchants' business practices and purify the short-video e-commerce market. Distinguish between compliant AI-enhanced visual optimisation and malicious AI-generated fraud, guiding merchants to use AIGC tools appropriately;

(3) Provide actionable governance solutions for short-video platforms and market regulatory authorities, filling the gap in detailed regulatory provisions for AIGC e-commerce content, thereby ensuring that AI tools empower e-commerce rather than disrupting the market.

1.5 Current State of Research at Home and Abroad

1.5.1 Research on AIGC and Commercial Visual Communication

Existing research suggests that AIGC has revolutionised visual content production models, lowering the barriers to design, enhancing production efficiency and enriching commercial visual creativity; however, it also raises issues regarding authenticity, copyright, ethics and the attribution of responsibility [1]. Current research on AIGC-related visual content largely focuses on AI-generated art, AI-assisted design, AI image generation, deepfakes and AI visual communication; research specifically addressing the issue of product packaging not matching the actual product is relatively scarce [2].

1.5.2 Research on False Advertising Online

Research into false advertising in traditional e-commerce has primarily centred on:

Exaggerated product specifications;

False claims regarding functionality;

Image manipulation;

Manipulation of customer reviews;

Promotional commentary during live-streaming sessions.

These studies provide an important foundation for this paper. However, there are clear differences between traditional image manipulation and AIGC generation. Traditional image editing typically involves processing existing images, whereas AIGC can directly regenerate products; therefore, it is necessary to establish new assessment criteria specifically for AI-generated visual content [3].

1.5.3 Research on Consumer Perception and Purchase Decisions

Consumers find it difficult to obtain all the true information about a product and must rely on external cues such as images and reviews to make judgements; in the context of short videos, they are even more heavily reliant on visual information. Product cover images construct consumers' 'visual prior knowledge'; people first accept the image of the product presented on the cover and then refer to other information. If the cover itself is misleading, subsequent purchasing behaviour will be based on a false perception [4].

1.5.4 Research on Platform Governance

Research on platform governance primarily centres on content moderation, algorithmic recommendations, merchant accountability and consumer oversight [5]. Currently, platforms typically employ a combination of automated and manual moderation; however, traditional moderation is more effective at identifying:

Illegal text;

Sensitive images;

non-compliant products;

Obvious infringing content [6].

However, determining whether 'a product's cover image matches the actual product' involves a more complex assessment of semantic and visual authenticity.

Consequently, there remain technical and institutional gaps in AIGC product visual moderation.

1.6 Shortcomings in Existing Research

Current research in this area suffers from three notable shortcomings: Firstly, the scope of research is rather broad. Existing studies on AIGC-generated false content have largely focused on areas such as deepfakes, fake news and AI face swapping, whilst paying insufficient attention to the specific commercial visual context of product images; Secondly, there is a lack of specific visual criteria for determining 'what constitutes falsity'. Existing research tends to discuss false advertising primarily from a legal or communicative perspective, whilst rarely distinguishing, from a visual design perspective, between: normal embellishment → exaggerated embellishment → alteration of information → fabrication of the product; Thirdly, the intermediary mechanisms underlying the infringement of consumer rights remain unclear. This paper will therefore investigate further: exactly how AIGC-induced visual distortions translate into cognitive biases among consumers, ultimately resulting in damage to their economic interests and consumer trust.

2. CORE CONCEPTS AND THEORETICAL FOUNDATIONS

2.1 Definition of AIGC

This paper defines AIGC as: the technology and its outputs that utilise generative artificial intelligence to automatically or semi-automatically generate or modify visual content based on user-inputted text, images or other information. According to Article 3 of the 'Measures for the Labelling of AI-Generated and Synthetic Content', AI-generated and synthetic content refers to information such as text, images, audio, video and virtual scenes that is generated or synthesised using artificial intelligence technology [6]. Compared with traditional digital design, the core characteristics of AIGC lie in its generative nature, automation, scalability and high editability.

2.2 AIGC Product Promotion Covers

AIGC product promotion covers refer to visual images of products that are generated, modified, enhanced or reconstructed using generative artificial intelligence during the promotion of goods in short-video e-commerce. Their functions include: attracting attention; showcasing products; establishing a product image; reinforcing consumer desire; and driving clicks and purchases.

2.3 Defining the Concept of 'Product Not as Advertised'

'Product not as pictured' should not be simplistically interpreted as 'the image being completely different from the actual product'. More accurately, it must satisfy three conditions: Firstly, there must be a visual discrepancy; Second, the discrepancy relates to a significant attribute of the product; Third, the discrepancy is sufficient to influence the purchasing judgement of the average consumer.

Therefore, when the cover image of an AIGC short video used for product promotion is deemed to be a case of "product not as advertised", this refers to a situation where a merchant uses AIGC to generate, modify or reconstruct the visual information of a product, resulting in a product depicted on the cover that differs from the actual product in key attributes perceptible to consumers, and where such a difference is significant enough to influence purchasing decisions.

2.4 Theoretical Foundation and Analytical Framework

2.4.1 Theoretical Foundation

(1) Information Processing Theory: Consumers do not analyse all product information comprehensively, but rather select certain information based on their own time, attention span and cognitive abilities. This is particularly true in the context of short videos, where product covers possess strong visual salience and are therefore likely to be the first information processed by consumers [7]. This gives rise to the following sequence: visual cover → rapid cognition → product impression → purchasing decision

(2) The Stimulus–Organism–Response (S-O-R) theory

Core model:

AIGC fake covers

↓

Visual stimulus (S)

↓

Consumer Cognition/Trust/Perceived Value (O)

↓

Clicks, purchases and consumer rights protection actions (R)

(3) The theory of information asymmetry: Merchants possess accurate product information, whilst consumers rely primarily on product cover images for information. When merchants utilise AIGC to create visual discrepancies: Merchant's information advantage → Consumer's information disadvantage → Erroneous decision-making → Infringement of consumer rights

2.4.2 The Integration Logic and Variable Mapping of the Triple Theory

The three theories mentioned above collectively form the analytical framework of this study, each corresponding to core variables and pathways in the research:

(1) Information Processing Theory

Cover Appeal (S1) → Degree of Information Acceptance (M) → Purchase Intention (M3). Explains why consumers make judgments based solely on the cover.

(2) S-O-R Model

Difference Between Cover and Actual Product (S2) → Perceived Deception/Trust Damage (O) → Click/Purchase/Complaint Behavior (R). Explains the psychological transformation and behavioral outcomes.

(3) Information Asymmetry Theory

AIGC Packaging Intensity (P3) → Consumer Information Disadvantage (P2) → Damage to Rights and Interests (D). Explains how AIGC amplifies structural information asymmetry.

2.4.3 Research Questions and Hypotheses

Based on the above theoretical integration, this study proposes the following research questions (RQ) and hypotheses (H):

RQ1: Through what psychological mechanisms do AIGC-generated fake product covers influence consumers' purchasing decisions and perceptions of their rights?

H1: The greater the visual discrepancy between AIGC-generated covers and actual products, the stronger consumers' perceived deception (O), and the higher their subsequent willingness to seek redress (R).

H2: Perceived trust mediates the relationship between cover image stimuli and purchasing behavior; that is, fake covers indirectly suppress the willingness to make repeat purchases by reducing consumers' trust in merchants.

RQ2: How do differences in the perception of "compliance boundaries" among different stakeholders (merchants, designers, consumers, and platforms) affect the identification of fake content and the effectiveness of governance measures?

H3: Merchants and consumers have significant differences in their definitions of "normal beautification" versus "excessive beautification," and this cognitive misalignment is a major cause of governance difficulties.

H4: Consumers' ability to identify AIGC content (e.g., whether they recognize it as AI-generated) negatively moderates the extent of rights infringement caused by deceptive product images; that is, the stronger their ability to identify such content, the weaker their perception of harm.

3. TYPES OF 'PRODUCT DOES NOT MATCH DESCRIPTION' IN AIGC SHORT-VIDEO E-COMMERCE COVERS AND CRITERIA FOR DETERMINING MISREPRESENTATION

3.1 Types of Distortions in AIGC Product Covers

Since the introduction of AIGC technology into the creation of product covers for short-video e-commerce, the boundaries of mild beautification traditionally associated with manual image editing have been breached, giving rise to a large number of visual distortions that exceed the scope of reasonable enhancement. Based on the specific dimensions of deviation in product visual presentation, the phenomenon of 'product not as depicted' in AIGC covers can be categorised into five typical types, with the degree to which each type misleads consumers' judgements and purchasing decisions increasing progressively.

Type 1: Colour Distortion

Colour is a core visual element through which consumers identify products and form initial aesthetic judgements. Minor adjustments to brightness, colour temperature and saturation within normal limits constitute compliant visual enhancement and do not alter the product's fundamental colour attributes. However, AIGC algorithms can radically reshape product colours, resulting in substantial colour deviations. For example, altering an ordinary matt grey to a high-end metallic finish, or replacing a dull solid colour with a translucent, bright hue. Such colour alterations are no longer mere optimisations of detail; rather, they alter the product's core visual characteristics, directly influencing consumers' aesthetic preferences and purchasing decisions, thereby constituting a clearly misleading visual distortion.

Type 2: Material Distortion

Material directly determines a product's texture, lifespan and value proposition, and serves as a key basis for consumers to judge product quality and price rationality. AIGC can achieve a visual upgrade in materials at low cost through texture generation and texture rendering, creating severe material illusions. Common scenarios include rendering ordinary plastic to resemble solid wood, metal or genuine leather textures, or simulating fine-spun cotton or wool materials from cheap synthetic fibres. Such distortions directly inflate consumers' psychological expectations regarding a product's quality and value, leading them to purchase low-quality goods at inflated prices; this is a typical form of fraud that undermines the fairness of transactions.

Type 3: Structural Distortion

Structural distortion constitutes a more severe form of functional fraud. AIGC can autonomously generate structural components, functional interfaces, decorative elements and control buttons that do not actually exist in the product, thereby fabricating the product's hardware structure and associated functions. Based on false product listing information, consumers may mistakenly assume that the product possesses the corresponding practical functions and structural advantages, only to find that the actual item they receive bears no resemblance whatsoever to the structural form and functional configuration displayed in the listing. This type of misrepresentation directly alters the product's core hardware information; it is highly deceptive and severely misleads consumers in their assessment of the product's utility.

Type 4: Distortion of Dimensions and Proportions

Using AI-driven scene reconstruction, perspective optimisation and proportion fine-tuning technologies, merchants can arbitrarily alter a product's visual volume and spatial proportions. By adjusting the scale of reference objects in the scene, modifying perspective angles and enlarging the subject's proportion, they can make small products appear larger, more substantial and better value for money, or make bulky products appear light and delicate. If such proportional alterations exceed the reasonable margin of error for visual presentation and interfere with consumers' objective judgement of the product's actual specifications, suitability for specific scenarios, or dimensions in use, this constitutes misleading information regarding specifications and may lead to disputes over products not matching the description.

Type 5: Complete Fabrication

Complete fabrication is the most serious and most infringing type of AIGC cover image distortion. Some merchants, having no corresponding product, style or specifications, utilise AIGC's image-generation capabilities to create exquisite product cover images out of thin air, with the aim of driving traffic, acquiring customers and inducing orders. This behaviour does not constitute the optimisation or retouching of physical products, but rather the fabrication of product information from scratch, completely detached from any basis in actual transactions. This behaviour fully meets the criteria for false advertising set out in Article 28 of the Advertising Law; it constitutes false promotion where 'the product does not exist or the core information is seriously inconsistent with reality', and is clearly unlawful.

3.2 The Boundary Between AI Enhancement and AI Fabrication

To clearly distinguish between compliant commercial enhancement and non-compliant visual fabrication, and to avoid the misconception that 'moderate optimisation is deemed to constitute fabrication', this paper constructs a four-tier model for assessing AI visual behaviour based on the degree of distortion, factual impact and risk of infringement, thereby clarifying the compliance boundaries and classification criteria for behaviours at different levels.

Table 1. A Four-Level Model for Detecting False Claims in Short-Video E-commerce Thumbnails.

Level	Type	Impact on Product Facts	Constitutes False Representation
Level 1	Minor embellishment	Very low	Generally does not constitute
Level 2	Visual optimisation	Low	Generally does not constitute
Grade 3	Property changes	Relatively high	may constitute
Grade 4	Fictitious goods	Extremely high	Constitutes serious false representation

Level 1: Basic enhancement. This involves only basic adjustments to image clarity, lighting and overall neatness, without altering any core attributes of the product such as appearance, material, structure or colour. It has virtually no impact on the facts regarding the product and constitutes a standard visual presentation practice within the e-commerce industry; it does not constitute false advertising.

Level 2: Visual optimisation. Without altering the product's core attributes, this involves optimising composition, shooting settings and colour atmosphere to slightly enhance the product's visual quality. As the impact on the product's true value and consumer decision-making is minimal, this falls within the scope of compliant commercial packaging and is generally not deemed to constitute falsification.

Level 3: Attribute Alteration. Using AIGC technology to modify key visual attributes such as colour, texture, finish and proportions, this significantly alters the product's true quality and value and exerts a considerable influence on consumer decision-making. Behaviour at this level constitutes a borderline violation and requires a comprehensive assessment taking

into account the product category, extent of the alterations and degree of consumer misrepresentation; it carries a risk of false advertising.

Level 4: Fabricated products. Generating non-existent product styles, structures or functions out of thin air, completely detached from any physical basis, has a disruptive impact on product facts, is highly misleading, constitutes a serious form of visual falsification, and clearly amounts to false advertising.

3.3 Indicator System for Determining 'Product Does Not Match the Description'

To achieve standardised and quantifiable assessment of AIGC cover image falsification, this paper combines distortion characteristics with the logic of consumer rights infringement to construct a 'product does not match the image' falsehood assessment framework comprising four primary indicators: authenticity, materiality, misleading nature and consequences. This facilitates a transition from subjective judgement to objective quantification. The four primary indicators can be further defined as follows:

Authenticity: This indicator serves as the foundational criterion, measuring the objective correspondence between the AI-generated cover image and the actual product. It specifically encompasses five core dimensions: the main body of the product, its appearance and structure, basic colour scheme, surface material, and dimensional proportions. It focuses on determining whether the AI-generated content has tampered with or fabricated the objective attributes of the product, and serves as the core basis for assessing visual distortion.

Significance: This indicator distinguishes between general embellishments and the falsification of key information, focusing on the decision-making weight of the modified content. It primarily assesses whether visual alterations constitute core reference information for consumers' purchasing decisions and whether they alter consumers' value judgements regarding the product's grade, quality and value for money. If the modifications pertain to non-critical details, the risk of misrepresentation is low; if they involve core decision-making information, the risk of misrepresentation increases significantly.

Misleading Nature: This indicator assesses the issue from the dual perspectives of consumer perception and the trader's subjective intent. On the one hand, it examines whether the general public, in typical browsing scenarios, is likely to develop a cognitive bias regarding the product; on the other hand, it determines whether the trader has a deliberate intent to mislead by using AIGC technology to embellish or fabricate information, intentionally conceal product defects, or induce consumers to place orders.

Consequential Impact: This indicator focuses on the actual harmful consequences resulting from acts of misrepresentation and is used to quantify the severity of the infringement. It primarily measures whether visual misrepresentation directly influences consumers' purchasing decisions and whether it leads to actual transactional disputes—such as returns, exchanges, financial losses, damage to trust, negative reviews or consumer complaints—using the outcome dimension to substantiate the harmfulness of the deceptive behaviour.

Final formula: Degree of visual discrepancy × Importance of product attributes × Degree of influence on purchasing decisions = Misrepresentation risk level

4. MECHANISM FOR THE FORMATION OF AIGC 'PRODUCT DOES NOT MATCH DESCRIPTION' COVER IMAGES

4.1 Merchants' Profit-Driven Motives

Short-video e-commerce relies heavily on traffic and conversion rates. Merchants typically require: click-through rate → dwell time → product views → conversion rate.

Consequently, visual appeal has become a key competitive tool. Amidst fierce competition, some merchants may adopt the following business logic:" As long as the cover image is eye-catching enough, consumers will click on it". When the platform's traffic incentive mechanisms align with merchants' sales interests, AIGC may become a tool for visual exaggeration or even the generation of misleading content.

4.2 The Low-Cost Nature of AIGC Technology

Traditional fraud requires photography, modelling and post-production design. AIGC reduces the cost of fraud: low cost + high efficiency + batch generation enable visual distortions to be rapidly scaled up.

Consequently, AIGC not only enhances the efficiency of legitimate design work but may also boost the efficiency of producing fraudulent content. This implies that platform governance is no longer merely dealing with 'a small number of manually created forgeries', but may now face: large-scale, automated visual misrepresentation.

4.3 Platform Traffic Mechanisms

Platforms prioritise content with high click-through rates, long dwell times and high engagement; visually striking cover images attract traffic, creating a self-reinforcing cycle that drives merchants to focus on optimising visual effects, whilst platform moderators face technical challenges. According to the *Measures for the Supervision and Administration of Live-streaming E-commerce*, display content such as live-stream covers must not deceive or mislead consumers, and platforms are required to improve their content moderation mechanisms [8]. However, the model combining automated and human review struggles to determine whether product covers match the actual items; the 'Measures for the Labelling of AI-Generated and Synthetic Content' are only used to identify whether content is AI-generated and cannot determine whether AI-generated content corresponds to the actual product. E-commerce platforms also lack regulatory mechanisms specifically targeting 'AI-generated deceptive images' [6]. In summary, there are technical and institutional loopholes in the visual review of AIGC products.

4.4 Fragmented Consumer Attention

Short-video consumption is characterised by rapid browsing, information overload and low cognitive effort. Consumers do not have sufficient time to verify the authenticity of products.

Consequently, this tends to lead to: visual first impressions > rational judgement

4.5 Lagging Platform Moderation Technology

Traditional moderation primarily targets: text; sensitive terms; and image violations. However, AIGC 'products not matching descriptions' constitutes a visual authenticity issue. Consequently, it is difficult to assess such cases relying solely on traditional content moderation.

5. PATHWAYS THROUGH WHICH AIGC FALSE PACKAGING INFRINGES UPON CONSUMER RIGHTS

5.1 Harm to Consumers' Right to Information

The root cause of harm to consumer rights lies in the information exposure stage; AIGC-generated deceptive product covers directly infringe upon consumers' statutory right to be informed by creating information distortions. Under the *Consumer Rights Protection Law*, businesses are required to disclose product information truthfully and comprehensively; AIGC-generated deceptive product covers simultaneously violate the two core obligations of truthfulness and comprehensiveness in information disclosure [9].

In terms of authenticity, merchants utilise AI algorithms to optimise and reshape the visual presentation of products, fabricating key attributes such as material, colour, texture and proportions. The visual presentation differs substantially from the actual product, far exceeding the scope of reasonable embellishment, and thus constitutes a false statement of information. In terms of comprehensiveness, merchants display only the optimal visual effects generated by AI, deliberately concealing key information such as the product's actual details and inherent defects, resulting in incomplete and distorted information upon which consumers base their decisions.

Furthermore, the majority of AIGC product covers fail to display the required 'AI-generated' label as stipulated by regulations. Consumers are unable to identify the nature of the content, thereby completely losing the basis for distinguishing between genuine and false information. This further exacerbates the problem of information asymmetry and provides a clear legal basis for infringement claims.

In terms of the nature of the harm, the infringement of the right to be informed is not merely a matter of informational bias, but rather a complete deprivation of consumers' ability to make rational comparisons and set prices prudently, thereby undermining the foundation of voluntary and fair transactions. Overall, misleading AIGC product covers undermine the authenticity and integrity of the consumer information environment at its source, constituting a structural and fundamental infringement of consumers' right to be informed.

5.2 Damage to Economic Interests

AIGC-generated false product covers mislead consumers into forming excessively high expectations of the goods, causing them to pay prices higher than the actual value of the goods. This directly undermines the principle of equivalence between the price paid and the value of the goods, infringes upon consumers' right to fair transactions as stipulated in the *Consumer Rights Protection Law*, and results in multi-layered, structural economic harm [9].

Firstly, there are direct economic losses. By using AI to embellish product images, merchants inflate consumers' psychological valuation, leading them to purchase low-quality physical goods at higher prices and incurring significant losses due to the price differential. This harm stems from the merchants' manipulation of information and is not attributable to normal market fluctuations or individual preferences.

Secondly, there are the costs associated with indirect transactions and the enforcement of consumer rights. When goods do not match the description, this gives rise to logistical, communication and time costs associated with returns and exchanges, as well as the energy expended on gathering evidence, lodging complaints and making reports. In particular, there is a phenomenon known as 'small-value sunk costs': where the cost of seeking redress for low-priced goods exceeds the value of the goods themselves, leading most consumers to choose to abandon their claims and bear the full loss themselves. This effectively condones merchants' fraudulent practices and undermines the effectiveness of remedies for small-value infringements.

Finally, there are hidden opportunity costs and consequential losses. The time and effort consumers expend on resolving disputes result in a loss of other potential benefits, whilst the cost of capital tied up when seeking redress is blocked, and the accumulation of small losses from repeated infringements, continue to erode consumers' rights and their spending budgets.

Overall, the economic damage caused by AIGC-generated fake product covers comprises three layers: the surface layer consists of losses arising from the price difference between the advertised price and the actual value of the goods; the middle layer comprises various transaction costs incurred through returns, exchanges and the pursuit of redress; and the deeper layer consists of sunk costs and opportunity costs resulting from consumers' decision to forgo seeking redress. The accumulation of these multi-layered losses results in a compound economic harm, fostering a structural market anomaly where businesses face 'low costs of fraud, high profits and difficulty in being held accountable', thereby transforming damage to consumers' economic rights from isolated, sporadic issues into a normalised market risk.

5.3 Damage to Consumer Trust

Fake AIGC cover images trigger a four-tiered, progressive collapse of consumer trust, driving up overall market transaction costs and inflicting systemic, long-term damage on short-video e-commerce. This results in:

Trust in merchants

↓

Trust in the platform

↓

Trust in AI-generated content

↓

Trust in the short-video e-commerce sector as a whole

Firstly, trust in individual merchants is collapsing. The discrepancy between the advertised product and the actual item leads consumers to conclude that merchants are deliberately misleading them through visual deception; even if the issue is rectified through after-sales service, trust in that merchant is completely lost, prompting consumers to avoid purchasing from them or to post negative reviews.

Secondly, trust in the platform's systems is eroded. The widespread practice of AI-generated cover image fraud leads consumers to question the effectiveness of the platform's moderation processes, the adequacy of its redress mechanisms and the obsolescence of its regulatory framework, resulting in an irreversible decline in institutional trust in the platform's governance capabilities and impartiality.

Third, trust in AI technology as a whole is being eroded. The fraudulent practices of individual merchants give rise to negative externalities regarding trust in the technology, causing consumers to question AIGC technology as a whole and hindering the realisation of technological dividends in compliant commercial AI applications.

Fourthly, a crisis of trust in the industry's business model. The normalisation of fraud has led consumers to adopt a defensive mindset that 'short-video e-commerce content cannot be trusted', completely eroding the industry's core 'content trust premium'. Furthermore, rebuilding trust in the business model is extremely difficult and time-consuming, which will constrain the industry's development in the long term. From an economic perspective, the breakdown of trust leads to a general increase in market transaction costs. Consumers must expend greater effort to verify information and retain evidence for the purposes of asserting their rights; the costs for honest merchants to acquire customers and build trust have increased; and platform governance expenditure has risen sharply. Ultimately, this results in efficiency losses across the entire e-commerce transaction system, undermining the industry's developmental advantage of low trust costs.

Overall, the damage to trust caused by AIGC-generated fake product images extends from individual merchants to the broader industry ecosystem; it is the underlying cause of the persistent 'bad money drives out good money' phenomenon, severely undermining the fair competitive order and the foundations for sustainable development in e-commerce.

5.4 Pathways of Psychological Harm to Consumers

The harm caused to consumers by AIGC-generated deceptive product images is not limited to the informational, economic and trust-related levels; it also results in deep-seated, cascading and persistent psychological harm, forming a complete, closed-loop process of psychological trauma. The core trigger is the vast disparity between the extremely high expectations created by AI's sophisticated visual rendering and the actual physical product.

This psychological harm process is divided into six progressive stages: visual attraction → formation of expectations → purchase → discrepancy upon receipt → disappointment/anger → decline in trust. The most critical element is the 'discrepancy between visual expectations and the actual product experience'.

Visual attraction occurs when optimised AI-generated cover images, with their striking visual impact, rapidly capture consumers' attention and spark initial interest; the formation of expectations arises when consumers, relying on misleading cover information, independently construct idealised psychological expectations regarding the product's texture, appearance and performance; the decision to purchase is driven by high psychological expectations combined with sunk costs—such as time, effort and money—which prompt consumers to complete the purchase and develop an emotional attachment; Disappointment upon receipt: the physical product falls severely short of these idealised expectations, resulting in a failure to confirm expectations and triggering a disruptive cognitive conflict; Fifth, an outburst of negative emotions: consumers experience profound disappointment due to unmet expectations; upon realising that the merchant has deliberately employed AI-generated visual deception, they further harbour negative emotions such as anger and a sense of having been duped; Sixth is the collapse of trust and behavioural change: the negative experience reshapes consumers' perceptions, with their distrust spreading from individual merchants to the platform, AI technology and the e-commerce industry as a whole, whilst simultaneously giving rise to defensive consumer behaviours such as cautious shopping, retaining evidence of unboxing, and avoiding products with visually appealing cover images.

Among these, the discrepancy between expectations and the actual product received serves as the central hub of the entire psychological harm pathway. This forms a chain of causality: 'the higher the visual quality of the AI-generated cover image → the higher the consumer's expectations → the greater the discrepancy between the actual product and expectations → the more severe the negative emotions and damage to trust'. The core harm caused by AIGC visual deception lies not in the absolute quality of the product, but in the amplification of relative deprivation by raising user expectations.

This mechanism gives rise to two key characteristics: firstly, consumer satisfaction is determined by the 'discrepancy between expectations and experience'; the greater the discrepancy, the more emotional the reviews and the stronger the inclination to spread negative feedback; secondly, a significant disparity between the visual representation and the actual product completely erodes consumers' tolerance, causing them to abandon any willingness to be understanding and instead adopt confrontational behaviours such as aggressive rights protection and public exposure.

5.5 Damage to the Market Ecosystem

If certain merchants persistently use AIGC to create deceptive content, this will result in:

Businesses operating with integrity

↓

Rising customer acquisition costs

↓

Forced to resort to visual deception

↓

The ‘bad money drives out good money’ phenomenon in the industry

Firstly, honest businesses find themselves caught in a multi-faceted cost crisis: AIGC-enhanced covers are more eye-catching, whilst real-life photographs—constrained by practical limitations—suffer from a clear disadvantage in terms of traffic. Consequently, businesses are forced to increase their advertising and production costs to acquire customers; consumers are gradually developing a preference for overly polished covers, leading to real-life content being marginalised by algorithms; overall market trust is declining, and honest businesses suffer reputational damage as a result, leading to a drop in conversion rates and revenue.

Secondly, the widespread adoption of visual deception has created a prisoner’s dilemma. In the absence of external constraints, driven by game-theoretic rationality, businesses tend to follow the trend and use AIGC to fabricate visuals; individual profit-seeking ultimately results in damage to the industry’s collective interests. Some businesses also lower their quality control standards as a result, channelling resources into visual packaging, thereby undermining the industry’s product supply and innovation capacity. Consequently, a ‘triple structural distortion’ emerges, where ‘bad money drives out good’: firstly, algorithms prioritise clicks and conversions, causing traffic to be disproportionately channelled towards merchants skilled in AI-generated packaging; secondly, distorted product images render price as a poor indicator of quality, squeezing the premium margins of high-quality merchants; thirdly, as fraudulent merchants expand whilst honest ones contract, industry resources are diverted towards visual packaging, leading to a decline in overall product quality.

These three distortions mutually reinforce one another, forming a self-perpetuating vicious cycle characterised by a ratchet effect: whilst the market slides easily towards inferiority, restoring and rebuilding consumer trust is both difficult and time-consuming. When industry self-regulation fails, external regulatory intervention is required; however, the technical barriers to AIGC content detection are high, and the various costs associated with governance—including fiscal expenditure, platform R&D, consumer rights protection and merchants’ self-verification—are borne by society as a whole as negative externalities. At the same time, the significant diversion of regulatory resources weakens efforts to tackle other market violations.

In summary, false AIGC cover images give rise to a structural, self-reinforcing market crisis. They harm honest businesses, disrupt the allocation of market resources and inflate the costs of social governance. When visual fraud evolves into a means of survival for the industry, the foundations of trust and quality in short-video e-commerce are undermined. This also raises a governance challenge in the digital age: how to harness the commercial value of AI whilst upholding the ethical baseline of market information integrity.

6. EMPIRICAL RESEARCH DESIGN (TO BE COMPLETED)

6.1 Research Objectives

Through questionnaire surveys and semi-structured interviews, this study aims to validate the proposed classification of AIGC ‘product mismatch’ types, assessment indicators and the model of pathways leading to rights infringement from the perspectives of multiple stakeholders—including consumers, merchants and platform practitioners—whilst also exploring their attitudes and recommendations regarding the governance of commercial visual content generated by AIGC.

6.2 Questionnaire Design

6.2.1 Interview Participants

We plan to interview four categories of stakeholders:

(1) Merchants (3–5)

To understand their objectives in using AIGC for product visual design, their operational methods, their understanding of compliance boundaries, and the operational pressures they face.

Operates an active store on major e-commerce platforms (Douyin, Kuaishou, Taobao, etc.); Has used AIGC tools to create product covers or detail pages within the past 6 months; Covers various product categories (such as apparel, food, and beauty) and businesses of different sizes (small and medium-sized merchants/brands).

(2) Visual designers (3–5)

To understand the specific application scenarios of AIGC in product visual design, the limits of its technical capabilities, and the criteria used to distinguish between 'normal enhancement' and 'excessive enhancement'.

At least 2 years of experience in e-commerce visual design; Practical experience using AIGC tools (such as Midjourney, Stable Diffusion, Meitu AI, etc.) for commercial projects; Experience working at an e-commerce agency, design studio, or within a brand's in-house team.

(3) Consumers (5–8)

Gain an understanding of their specific experiences of AIGC-generated products not matching the online descriptions, their cognitive processes, emotional reactions, behavioural consequences and experiences of seeking redress.

Have made online purchases within the past 6 months; Report having encountered situations where the product image did not accurately reflect the actual item; Include participants from different age groups and with varying shopping frequencies to capture a diverse range of experiences.

(4) Platform operations or moderation staff (2–3 individuals)

To understand the platform's review processes for AIGC product content, the technical methods employed, the challenges faced, and directions for improving governance.

Currently employed by a major e-commerce or content platform; Working in a role related to content moderation, merchant management, algorithmic risk control, or compliance; Has direct knowledge of AIGC content moderation processes.

6.2.2 Interview Outline

Core questions for merchants:

Do you currently use AIGC tools to create product cover images? Which tools and methods do you primarily use?

In your view, to what extent should AIGC-generated covers resemble the actual product to be considered compliant?

Are you aware of the relevant requirements set out in the Advertising Law and the Measures for the Labelling of AI-Generated and Synthetic Content?

Key Questions for Consumers:

Have you ever purchased a product you were dissatisfied with because the product image did not match the actual item? Could you describe an experience that left a particularly strong impression on you?

What kind of discrepancies between the product image and the actual item do you consider acceptable, and what kind do you regard as misleading?

When you've encountered a case of 'the goods not matching the description', what steps did you take? What difficulties did you face whilst seeking redress?

Key questions for platform operators:

How does the platform currently review AIGC-generated product visuals? Has a dedicated AI content identification mechanism been established?

What do you consider to be the greatest challenge facing the platform in addressing 'product mismatches' caused by AIGC?

What suggestions do you have for improving the platform's governance mechanisms?

6.2.3 Survey (approx. 15 questions, 3 minutes)

(1) Screening Question: Have you ever come across a short-form e-commerce video where "the cover was enticing, but clicking through revealed a different product"?

A. Frequently (several times a week) B. Occasionally C. Never (End)

(2) Frequency of Exposure: Over the past 3 months, how often have you encountered this situation?

A. Every day B. 2–3 times a week C. A few times a month

(3) Primary Platforms: On which platforms do you primarily encounter this? (Multiple choices)

A. Douyin B. Kuaishou C. Video Account D. Xiaohongshu E. Other

(4) Thumbnail Types: Which type of "product mismatch" thumbnail do you encounter most often?

A. Exaggerated results (e.g., "Lose 10 jin in 3 days" with a before-and-after comparison)

B. Product mismatch (cover shows a high-end steak, but the actual item is a patchwork of meat)

C. Fake settings (cover says "factory clearance sale," but it's actually an ordinary store)

D. Misleading pricing (cover says "9.9 yuan," but clicking reveals 99 yuan)

E. Irrelevant clickbait (attracting clicks with beautiful women or cute pets, but actually selling products)

(5) Impact on Trust: Does this situation reduce your trust in AIGC content or the platform's recommendation algorithm?

A. Significantly reduced B. Slightly reduced C. No impact

(6)-(8) Perceived Harm (Scale: 1 = Strongly Disagree, 5 = Strongly Agree)

This wasted my time and attention.

I feel deceived and experience negative emotions (anger/disgust).

Even if the amount is small, I feel like I've lost money.

(9) Financial Loss: Have you ever purchased an unsatisfactory product as a result and returned it?

A. Yes, return was successful B. Yes, return failed/had to pay shipping costs myself C. Did not purchase

(10) Willingness to Seek Redress: In this situation, what would you do?

A. Report it/Leave a negative review B. Contact customer service C. Accept it as bad luck D. Be more cautious in the future

6.3 Analysis Procedure

Thematic Analysis was employed, following a four-step process:

(1) Transcription and Familiarization: Transcribe the interview recordings into text, read them repeatedly, and annotate key statements.

(2) Initial Coding: Label each sentence in the text individually to distill initial concepts (e.g., "cost drivers," "expectation gaps," "audit blind spots").

(3) Focused Coding: Categorize and aggregate the initial concepts to form sub-themes (e.g., "technology-driven factors," "cognitive discrepancies," "governance barriers").

(4) Theme Extraction: Based on the sub-themes, abstract three core dimensions—the current state of technology adoption, manifestations of cognitive misalignment, and the root causes of governance dilemmas—and cross-validate them against the expected outcomes (lack of standards, cognitive imbalance, governance lag, and difficulties in asserting rights).

7. EXPECTED RESULTS AND DISCUSSION OF THE EMPIRICAL STUDY

7.1 Interview Conclusions

(1) AIGC has been widely adopted in e-commerce visual design; however, its technical shortcomings and industry-wide competition have made 'products not matching descriptions' caused by AI enhancement a widespread problem within the sector.

(2) The core of the industry's disorder stems from four major issues: a lack of standards, cognitive imbalances, lagging governance and difficulties in asserting rights; problems regarding the rights and responsibilities of various stakeholders and misalignments in understanding are particularly pronounced.

(3) The governance of AIGC-generated product visuals is a systemic undertaking that requires the establishment of a multi-stakeholder collaborative governance mechanism to clarify compliance boundaries whilst balancing the value of technological application with the protection of consumer rights.

7.2 Questionnaire Conclusions

(1) Disruption of the Cognitive Chain (Erosion of Time and Trust)

AIGC has reduced the cost of creating cover images, leading to a sharp decline in the correlation between "cover image" and "content." Frequent exposure (more than once a day) causes consumers to develop a generalized perception of "algorithmic deception," which not only reduces trust in the specific account but also erodes underlying trust in the platform's recommendation mechanism.

(2) Pathway 2: Emotional Depreciation (Implicit Mental Account Loss)

The "expectation gap" created by fake covers triggers a sense of anger at being deceived. This negative emotion spreads from individual products to the entire AIGC content ecosystem. The psychological defense costs consumers incur as a result—such as repeatedly cross-checking information and questioning authenticity—far exceed the price of the product itself.

(3) Path Three: Collective Erosion of Minor Rights (Cost of Seeking Redress > Amount Lost)

While the loss for an individual consumer is small (mostly under 100 yuan), the time and effort required to seek redress far exceed the benefits of a refund, leading most people to choose "silence." This pattern of "small amounts, high frequency, and no accountability" creates a regulatory gray area for false cover images, with the ultimate damage borne by the entire consumer base.

(4) Key Conclusion: In the AIGC era, the greatest harm caused by "products not matching descriptions" is not the loss from a single purchase, but the long-term erosion of trust in the digital consumer environment. When every cover image requires "skeptical decoding," consumers will pay a huge psychological and cognitive toll.

8. A MULTI-STAKEHOLDER COLLABORATIVE GOVERNANCE SYSTEM FOR AIGC SHORT-VIDEO E-COMMERCE COVER IMAGES

This paper constructs a multi-stakeholder collaborative governance system, accompanied by targeted optimisation mechanisms, to mitigate the issue of AIGC visual fraud and standardise the creation and use of short-video e-commerce cover images.

Firstly, a four-tier collaborative governance model is established. Based on self-regulation by merchants at the source, merchants are required to ensure the authenticity of core information regarding the subject, attributes, dimensions and functions of the products featured on covers; with platform-based technical controls at the core, utilising AI recognition, text-image comparison and anomaly detection technologies to enable automatic verification of discrepancies between cover images and product detail images; supplemented by consumer participation in oversight, by launching functions such as AI cover image complaints, uploads of physical product comparisons and feedback on non-compliant labels to broaden oversight channels; and underpinned by government regulation as a safety net, thereby forming a four-pronged collaborative governance framework involving the government, platforms, merchants and consumers.

Secondly, standardised visual design guidelines shall be established. Standards for the classification of product visual information shall be clarified: core attributes such as the product's main subject, structure, materials, dimensions and functions must not be altered; only auxiliary visual elements such as lighting, colour, background and composition may be optimised, thereby establishing the AIGC creation principle of 'zero modification of core attributes'.

Thirdly, implement a transparency labelling mechanism for AI-generated content. Product cover images generated or optimised with AI assistance must be clearly labelled; at the same time, it must be made clear that such labelling does not exempt the platform from liability for authenticity, thereby preventing the use of AI labelling to evade responsibility for false advertising.

Fourthly, a three-tier consistency review mechanism must be established. The platform will automatically compare product covers, product detail images and user-taken photographs of the actual product, setting a discrepancy threshold; any deviation exceeding this standard will trigger manual review, thereby eliminating the issue of products not matching their descriptions at a technical level.

9. CONCLUSIONS AND OUTLOOK

Research Conclusions

This paper conducts a systematic analysis of the 'product mismatch' phenomenon in AIGC short-video e-commerce covers, examining dimensions such as conceptual definitions, typology, formation mechanisms, pathways of rights infringement, and governance strategies.

The study found that:

Firstly, AIGC is transforming the way product visuals are produced for short-video e-commerce, but its high degree of freedom and low cost have also lowered the threshold for visual fraud.

Secondly, AIGC-induced 'product mismatch' is not the result of individual merchant behaviour, but rather the combined effect of: merchants' profit-seeking behaviour, low technical barriers to entry, platform traffic mechanisms, consumer cognitive characteristics, and inadequate review mechanisms.

Third, the harm caused to consumers by AIGC-generated misleading product visuals exhibits distinct characteristics of a chain reaction: visual distortion → cognitive bias → misjudgement of value → erroneous purchase → discrepancy between the product and its description → financial loss and erosion of trust.

Fourthly, addressing the issue of misleading AIGC product visuals cannot be achieved simply by banning AI; instead, a governance framework should be established based on the following principles: 'permitting reasonable embellishment, restricting alterations to core attributes, strengthening platform moderation, and improving consumer oversight'.

REFERENCES

[1] Li Yazheng, Zhang Chenhong. (2025). AIGC Technology Empowering Book Visual Design: Potential Value, Application Scenarios and Process Innovation. #i {China Media Science and Technology} (7), 14–18
[2] Wan Jiahui. (2025). A Study on the Strategies and Applications of AIGC in Visual Communication Design. #i {Asia-Pacific Humanities and Arts} #i {,} #i {06}(01)
[3] Liu An'an, Su Yuting, Wang Lanjun, Li Bin, Qian Zhenxing, & Zhang Weiming et al. (2024). Research Progress on AI-Generated Visual Content Generation and Attribution. #i {Chinese Journal of Image and Graphics} #i {,} #i {29}(6), 1535–1554
[4] Liu Han. #i {A Study on the Influence of Information Cues on Consumer Purchase Decisions}. (Doctoral dissertation, University of Electronic Science and Technology of China)
[5] Xu Jie. (2019). A Study on the Optimisation of Ecological Governance Mechanisms for Short-Video Platforms. #i {News World} (8), 5
[6] Huang Yinxu. (2025). The Regulatory Functions and Legal Application of the 'Measures for the Labelling of AI-Generated and Synthetic Content'. #i {Legal Application} (9), 136–147
[7] Zheng Yan. #i {A Study on the Cognitive Information Processing of Online Shopping Decisions}. (Doctoral dissertation, Soochow University)
[8] Liu Shuangzhou. (2026). A Preliminary Exploration of Legislative Breakthroughs and Implementation Pathways for the Regulation of Live-streaming E-commerce Advertising: An Analysis Based on Article 35 of the 'Measures for the Supervision and Administration of Live-streaming E-commerce'. (3), 51–56
[9] Xu Shuijun. (2004). #i {Consumer Rights Protection Law}. China Economic Press