

Virtual Identities, Real Revenue: Deepfake as a Disruptive E-Business innovation in Chinese Cross-Border Fashion

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Abstract:

The purpose of this research is to explore the role of Deepfake technology in China's cross-border fashion e-commerce platforms, public perception, and the ethical challenges that emerge from its implementation. This study employs netnography to analyse discussions from Reddit, Rednote, and LinkedIn, examining the perspectives of consumers and industry professionals regarding AI-driven visual content for e-business. Findings reveal varying attitudes shaped by cultural, economic, and ethical considerations. Chinese e-commerce retailers prioritise efficiency and aesthetics, yet global consumers and professionals express concerns over transparency, labour displacement, and regulatory oversight. The research highlights the legal gaps that enable Deepfake technology to avoid traditional copyright restrictions, allowing businesses to market the same product differently across regions without limitation. However, as AI-generated content becomes more widespread, ethical questions regarding consumer trust, authenticity, and AI regulation become increasingly critical. This paper proposes a fresh perspective on synthetic media in AI-powered e-commerce by establishing Hall's context model that integrates digital ethics and cross-cultural communication. It contributes to emerging scholarship on how deepfake technologies are interpreted across cultural contexts and highlights the need for further research into consumer acceptance, ethical transparency, and the long-term implications of synthetic identities in global digital retail.

Keywords:

Deepfake, Artificial Intelligence, Cross-Border E-Commerce, Netnography, Ethical Business, Fashion Marketing, AI Regulation, Digital Commerce

Word Count:

6236 words

1. Introduction

In an era where digital innovation shapes global commerce, China's cross-border e-commerce sector has emerged as a dominant force. *Made in China is more than a label* — China is the world's largest producer and exporter of textiles, with an output of 19.36 billion garments (Statista, 2024). At the forefront of this revolution is the fashion industry, where platforms like Shein and Temu dominate global markets through agile supply chains and AI-driven innovation. (Parker and Wang, 2016) Most e-commerce platforms employ advanced technologies to redefine speed, scalability, and consumer engagement, enabling them to distribute vast amounts of fast fashion apparel across global markets.

Artificial intelligence (AI) Deepfake, a form of synthetic media technology that rapidly transforms e-commerce strategy — by enabling personalised advertising, cost-efficient model generation, and real-time localisation. (Shi et al., 2020) AI Deepfake eliminates traditional barriers such as photo shoots, international model contracts, and region-specific campaigns (Luce, 2018). In a fast fashion market characterised by constant product turnover and global reach, this technology provides brands with an unprecedented ability to tailor digital content to specific cultural aesthetics and consumer preferences.

Furthermore, cultural adaptation remains a significant challenge for cross-broader retailers, as they attempt to address diverse beauty standards and regulatory landscapes across markets. (Gursoy et al., 2021) E-business retailers increasingly implement deepfake technology to modify digital models based on market-specific beauty standards, raising questions about ethics, cultural representation, and consumer transparency.

2. Literature Review

The use of artificial intelligence in fashion has been extensively investigated, particularly in areas such as virtual assistants, digital try-ons, and personalised shopping experiences. (Luce, 2018; Hajer Ghodhbani et al., 2022; Dwivedi et al., 2021) AI has significantly enhanced consumer engagement by predicting shopping behaviours, streamlining supply chains, and automating marketing strategies (Jain et al., 2023). Many cross-border e-commerce platforms, particularly in China, have adopted AI-driven technologies to optimise operations and expand their global reach. However, despite its growing adoption, AI Deepfake technology in fashion retail remains an under-explored area, especially concerning consumer trust, ethical implications, and cultural representation.

2.1 Technological Innovation

Deepfake is an AI image modification technology that effectively manipulates facial features. It produces realistic-looking alternate identities or expressions, including face generation, facial attributes, expression swap, and face swap. (Waseem et al., 2024). While Deepfake applications have primarily been studied in the media, they are now widely used in a variety of fields. In a previous study, Deepfake was employed in different areas, for example, medical purposes for patient privacy (Hou et al. 2023), an approach to video scams (Luo et al. 2024) and social media

presentation (Chesney & Citron, 2019). It has the potential to be helpful or harmful, in any case, it is now being used as an e-business innovation.

In fashion e-commerce, AI Deepfake technology offers e-commerce retailers an innovative way to localise marketing content, allowing them to modify digital models' facial features to align with regional beauty preferences. (Yang et al., 2023). This approach eliminates the need for costly photoshoots and international model contracts, making fast fashion marketing more cost-effective and adaptive (Shi et al., 2020). This capability not only reduces costs but also accelerates time-to-market which is critical in fast fashion's race to release thousands of products weekly. There are a number of tools capable of achieving face shaping and deepfake, including Deep Deepfake Studio, Midjourney and Pixble. Figure 1 demonstrates an example of deepfaking facial features.



Figure 1: deepfake and face-swapping technology

2.2 Cross-Border E-Business

In China, cross-border e-commerce has been developing rapidly due to the Silk Road Economic Belt initiative, which has fuelled global trade and technological advancements (Wang et al., 2018). Many cross-border e-commerce platforms, such as Etsy, Shein, and Temu, are widely employing AI to optimise supply chain efficiency and automate consumer engagement (Zhang & Su, 2022).

China's cross-border e-commerce sector has experienced extraordinary growth over the past five years, with trade volumes nearly doubling since 2019. According to iResearch (2019), the country's cross-border B2C e-commerce market was valued at USD 155 billion, a figure HSBC (2025) projects will surge to USD 500 billion by 2025. This expansion reflects strategic diversification in global market penetration, as Chinese firms deepen their integration into international value chains through mergers and acquisitions, joint ventures, partnerships with local enterprises, and overseas R&D centres (Taylor, 2025). Additionally, specialised services such as mobile payment platforms, short-video integrations, and cloud-based SaaS solutions have accelerated China's leadership in digital trade innovation. By 2025, Chinese cross-border platforms are projected to capture 22% of U.S. and 16% of Western European online spending (HSBC, 2025), with fashion e-commerce driving a significant share of this growth. Fashion items account for 33% of China's cross-border transactions (Yang, 2024). For instance, Shein, aims to increase its annual revenue from USD 22.7 billion in 2023 to USD 58.5 billion by 2025 (Financial Times, 2023).

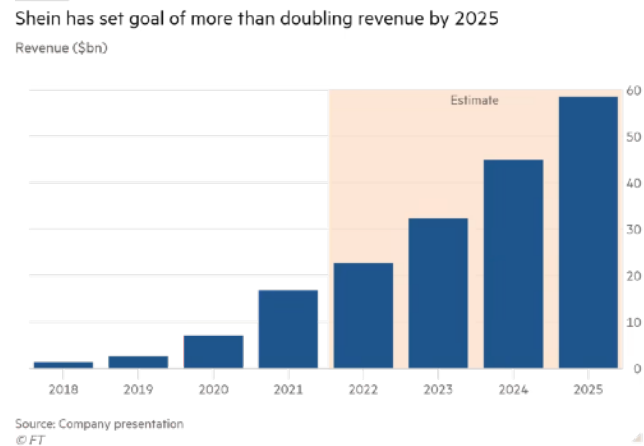


Figure 2: Shein revenue estimation

The fashion e-commerce industry has long been defined by its reliance on visual media, with product imagery and video content as critical drivers of consumer engagement and purchasing decisions (Shi et al., 2020). However, the unregulated use of AI deepfake in Chinese e-commerce presents new ethical and policy challenges. Whereas China has introduced strict AI governance policies in the political and media sectors, its e-commerce industry remains loosely regulated in terms of AI-driven marketing (Zhu & Chen, 2023). This raises critical questions regarding data privacy, consumer disclosure, and the long-term implications of AI-generated identities in global retail.

Although his application provides significant convenience for sellers by streamlining marketing efforts and reducing operational costs, it causes concerns regarding fairness and transparency. Brands that invest substantial resources in authentic product photography and branding may find their efforts undermined by AI-generated modifications that alter product presentation. Furthermore, global consumers, who rely heavily on visual representation when making purchasing decisions, may face challenges in determining whether the images they see accurately reflect the real-life product. This discrepancy could lead to issues of trust, misrepresentation, and potential dissatisfaction, ultimately affecting both consumer confidence and brand integrity in the competitive e-commerce landscape.

2.3 Ethical and Regulatory Challenges

According to previous research, Deepfake applications have already raised questions about authenticity, misinformation and consent in the wider context. (Mirsky & Lee, 2021). Studies on Deepfake ethics (Chesney & Citron, 2019) highlight how AI-generated content can manipulate consumer perceptions, and blur the lines between reality and digital fabrication.

The ethical implications of Deepfake extend beyond commerce. Recent EU research shows growing public concern about the risks of AI-generated Deepfakes, with 70% of citizens in the UK and 57% in France, expressing fears about their potential to affect voting integrity. (Eggert, 2024). The

European Parliament has explicitly highlighted the multiple risks posed by Deepfakes, including psychological distress, financial fraud and societal polarisation, as well as their ability to damage democratic trust and disrupt public discourse. (Broekema et al., 2021). As a result, the European Union (EU) took a significant regulatory step on the 2nd of February 2024 by unanimously approving the EU Artificial Intelligence Act (EU AI Act). This legislation introduces strict transparency requirements, requiring the disclosure of AI-generated content along with its original source material. The Act also establishes accountability measures for both AI developers and users, providing more supervision in the development of artificial intelligence technologies. As the EU is the first to legally require AI disclosure, other markets will likely adopt similar regulatory frameworks to address emerging ethical, legal and security concerns related to AI applications. These regulations could set a pattern for global AI governance in the future.

In the context of cross-border e-commerce, Deepfake technology introduces a unique issue that goes beyond general AI-generated models, which is cultural appropriation. E-commerce retailers tend to make products more appealing by reflecting local beauty standards and cultural norms by altering a model's identity and race to cater to overseas markets, particularly in the fast fashion sector, and this practice raises ethical concerns. The aesthetic changes, such as lightening skin tones or reshaping facial features to align with Western standards of beauty, not only reinforce harmful stereotypes, but also contribute to the erasing of cultural diversity in fashion representation.

Yet, Deepfake offers unprecedented opportunities for market expansion, creative design and cross-border policy collaboration. As virtual identities increasingly drive real-world revenue, the future of the fashion industry may depend on reconciling algorithmic efficiency with humanity. (Gursoy et al., 2021) Although AI face-swapping increases efficiency and market adaptability, its long-term adoption will depend on transparent ethical practices and regulatory monitoring.

2.4 Theoretical Review

Cross-cultural communication is important for analysing the different perceptions of deepfake technology among global digital marketers beyond the direct impact on trust and ethics. Accordingly, Edward Hall's (1976) theory of High-Context and Low-Context Communication offers a valuable framework for understanding how information, especially relating to authenticity and disclosure, is conveyed and received across cultural boundaries. Based on Hall's theory (1976), cultures can be distinguished on the basis of their reliance on explicit or implicit communication. Communication in high-context cultures (e.g., China, Japan, many Asian and Middle Eastern societies) is heavily dependent on implicit cues, shared understandings, non-verbal signals, and context. It is often difficult to directly convey meaning once it has been embedded in circumstances, relationships, and unspoken agreements. In contrast, low-context cultures (e.g., the UK, USA, Western European societies) value ambiguous, indirect, and explicit verbal communication. It is expected that communication is straightforward, precise, and literal, with little reference to context.

In the context of this study, cross-border e-commerce facilitates the exchange of goods and the interaction of diverse cultural norms and communication styles, acting as a digital bridge between Eastern and Western markets. Ethical tensions surrounding deepfake marketing arise from this cultural divergence, particularly between Chinese e-commerce retailers operating within high-

context cultures and Western consumers typically engaging from low-context cultures. These differences influence how transparency, authenticity and trust are interpreted in digital spaces.

This distinction extends beyond face-to-face interactions to digital communication, as demonstrated by Würtz (2006) in her seminal study, 'Intercultural Communication on Websites'. Her findings emphasise how cultural values are embedded in digital design and user engagement strategies, providing a fundamental perspective on how deepfake-enabled marketing practices may be perceived differently across cultural boundaries. In high-context settings, implied aesthetics and efficiency may be prioritised, whereas in low-context cultures, explicit disclosures and ethical accountability may be demanded. It's essential to recognise and analyse these cultural asymmetries, understanding the ethical controversies and consumer trust issues in global, AI-driven fashion retail.

HIGH CONTEXT CULTURE	LOW CONTEXT CULTURE
Less is verbally explicit, written or formally expressed, covert messages	Rule oriented, people act according to external rules, overt messages
More internalized understandings of what is communicated	More knowledge is public, external, and accessible
Knowledge is situational, relational	Knowledge is more often transferable
High commitment to long-term relationships	Low commitment to relationship.
High use of non-verbal elements; voice tone, facial expression, gestures, and eye movement	Message is carried more by words than by non-verbal means.
Decisions and activities focus around personal face-to-face relationships, often around an authoritative and competent person	Task-centered; activities focus around what needs to be done
One's identity is rooted in groups	One's identity is rooted in oneself and own achievements

Figure 3: High-Context and Low-Context Communication Theory
Base on Podgórecki, Ropski 2015, Edward T. Hall 1976

3. Methodology

This study mainly investigates public perceptions and ethical concerns surrounding Deepfake technology in fashion e-commerce. Netnography, a qualitative research method adapted from ethnographic techniques for analysing online discussions and understanding digital community behaviours (Kozinets, 2010). Kozinets (2010) defines netnography as a participant-observational research method grounded in online fieldwork, utilising computer-mediated communication to gather data. This approach functions as a digital extension of ethnography, enabling researchers to analyse and explain cultural and communal phenomena within online spaces. Netnography is widely recognised as a marketing research technique, as it collects publicly available data from online forums to identify and better understand the needs, behaviours, and interactions of specific consumer groups. Netography allows researchers to monitor and collect insights on artificial intelligence and e-business, particularly in online communities where users actively discuss emerging trends and industry shifts.. The adoption of this research method is driven by the fact that people tend to express more frank and detailed opinions in online spaces. This qualitative method was chosen due to its suitability for analysing naturally occurring, publicly available online interactions, which provides authentic insights into a global phenomenon that is operated by cross-border e-commerce, online discussions provide a diverse and accessible dataset that is beyond geographical boundaries. This research analyses discussions across multiple social media platforms, with a specific focus on Reddit (specifically subreddits such as r/deepfakes, r/fashion, r/ecommerce), Rednote (fashion-related communities and product reviews), and LinkedIn (professional groups related to digital marketing, AI in fashion, and e-commerce innovations). Each of which offers unique perspectives from different stakeholders between consumers and industrial workers.

Reddit is one of the largest global online forums where users engage in unfiltered, in-depth discussions. It is widely recognised for its grassroots, consumer-driven conversations and represents a space where individuals openly debate emerging technologies, express concerns about AI ethics, and critique corporate practices. Rednote, a fast-growing Chinese social media platform where Chinese users share everything from fashion content to social events and industry experiences. The primary information and acknowledgement of the use of AI in cross-border e-commerce was informed and provided by retailers, e-commerce entrepreneurs and digital marketers on Rednote. This platform is particularly significant for understanding first-hand perspectives from professionals who actively use AI-generated content in their e-commerce operations. Differing from Reddit and Rednote, LinkedIn is a professional networking platform that provides insights from business executives, industry leaders, and policymakers. Instead of casual discussions led by consumers, LinkedIn discussions tend to be more structured, analytical, and business-oriented that offer critical perspectives on labour displacement, corporate responsibility, and AI regulation.

Furthermore, netnography is particularly effective in revealing cross-cultural communication dynamics. By analysing discussions on various platforms, netnography provides a direct insight into how individuals from different cultural backgrounds express their understanding of, trust in, and concerns about AI-driven visual content. Hall's framework (1976) can be used to systematically analyse the implicit cues, subtle meanings and explicit demands found in these online discussions, revealing how high- and low-context communication preferences shape online dialogues about emerging deepfake technologies.

The findings identify four key themes that shape the discourse on AI-generated models in cross-border e-commerce, based on insights from these platforms. The results assemble diverse viewpoints, and provides a comprehensive analysis across among:

- Recognition & Aesthetic Appeal
- Transparency & Consumer Trust
- Ethics & Labour Displacement
- Regulation & Industry Standards

4. Findings and Discussion

4.1 Recognition & Aesthetic Appeal

Within Reddit communities focused on AI, fashion and ethics, user discussions reveal a range of opinions on AI-generated models and Deepfake marketing. Some users are aware that brands have already adopted these technologies, whilst others are unaware that AI-generated models are not yet seamless or easily identifiable. As one user noted, "People don't know that most images online today are AI".

Many users believe that AI-generated models will become a trend in fast fashion due to cost and efficiency benefits. Whereas luxury brands with extensive resources and branding priorities are less likely to adopt them. Some argued that the quality of images remains unrealistic, meaning AI-generated images may still leave plenty to be desired in terms of precision and accuracy. This could lead to a mismatch between the customer's perception of the product and the actual product, resulting in dissatisfaction and increased returns. One user expressed concerns that AI-created perfection twists material authenticity and proportions, making it difficult to evaluate the actual quality of a product. Another concern was the discrepancy between AI-enhanced visuals and real-life product, with users fearing that what they see online may not accurately represent what they receive. The discussion reveals a fundamental challenge in AI-driven marketing, engaging consumers with enhanced visuals can also lead to increased dissatisfaction, returns and mistrust in e-commerce.

On Rednote, Deepfake on cross-border e-commerce is a highly trending topic, generating over 2 million views, exploring how e-commerce retailers can operate without investing in professional models or photography. Many users insist that as long as sellers work with apparel manufacturers and logistics companies, launching an online business is relatively simple — further facilitated by AI-generated models that replace traditional photo shoots.

Discussions on Rednote reveal consumer opinions regarding the use of deepfake technology in commercial product marketing, particularly in the fashion sector. One actively debated post (Figure 4) demonstrated how AI-generated models can enhance the aesthetic appeal of jewellery in cross-border e-commerce, garnering over 200 comments and sparking a debate about AI's role in online retail.

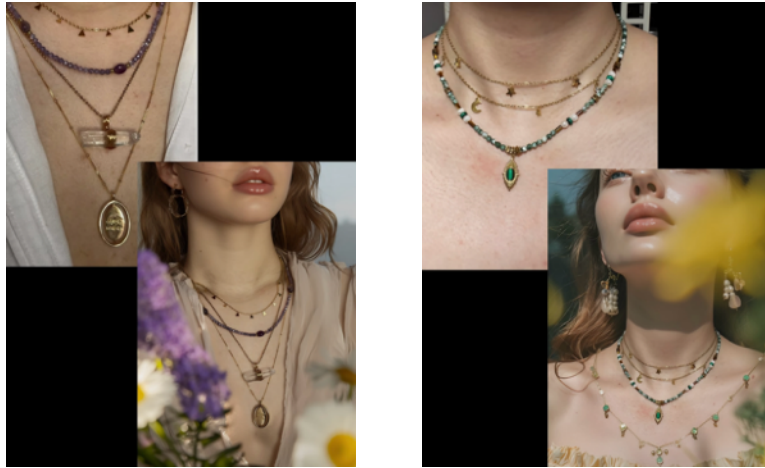


Figure 4: before & after Deepfake

The post also featured a poll (Figure 5), asking 'Do you think AI models will replace real models in e-commerce?' Out of 3,232 participants, a striking 79% voted 'yes,' only 21% voted 'no.' The overwhelming agreement suggests a growing acceptance of AI-driven marketing in e-business, with many users viewing it as a natural progression in e-commerce rather than an ethical dilemma.

Some users argued that AI-generated visuals enhance consumer engagement by focusing on sophisticated and aesthetic sense rather than individual identity. One commenter stated, 'It has nothing to do with the face; it's mainly about the atmosphere. It looks more appealing for purchasing.' This perspective aligns with existing marketing strategies where brands prioritise aesthetics, aspirational imagery, and emotional appeal over realism. Another user further justified AI use in jewellery marketing, making a point that as long as the actual product matches the advertised image, there is no harm in AI-enhanced visuals. This argument reflects an already widely accepted industry practice — most brands engage in extensive retouching and enhancement of product photography through lighting, texture refinement, and digital corrections to maximise consumer interest. According to the poll and discussion, deepfake is becoming widely accepted as a marketing tool, they tend to respond better to images that are aesthetically pleasing than authentic, regardless of whether they are generated by AI.

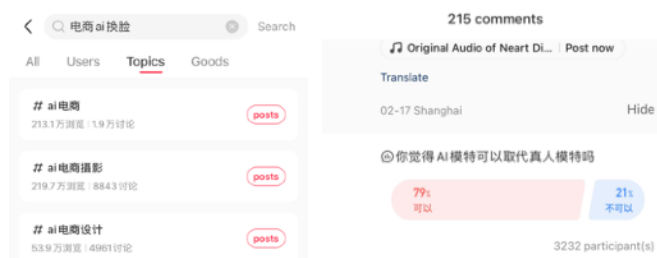


Figure 5: Rednote

4.2 Transparency & Consumer Trust

Consumer trust is not built overnight. Rather, it develops gradually through consistent transparency, authenticity, and ethical business practices. A recent Reddit discussion titled “Your Clothes Are Being Marketed with AI Models”, posted by a graphic designer working in fashion e-commerce, has revealed the dark truth in online retail context. The post gathered over 100 comments, leading both consumers and industry professionals to expose the complex implications of AI-driven marketing. (Figure 6)

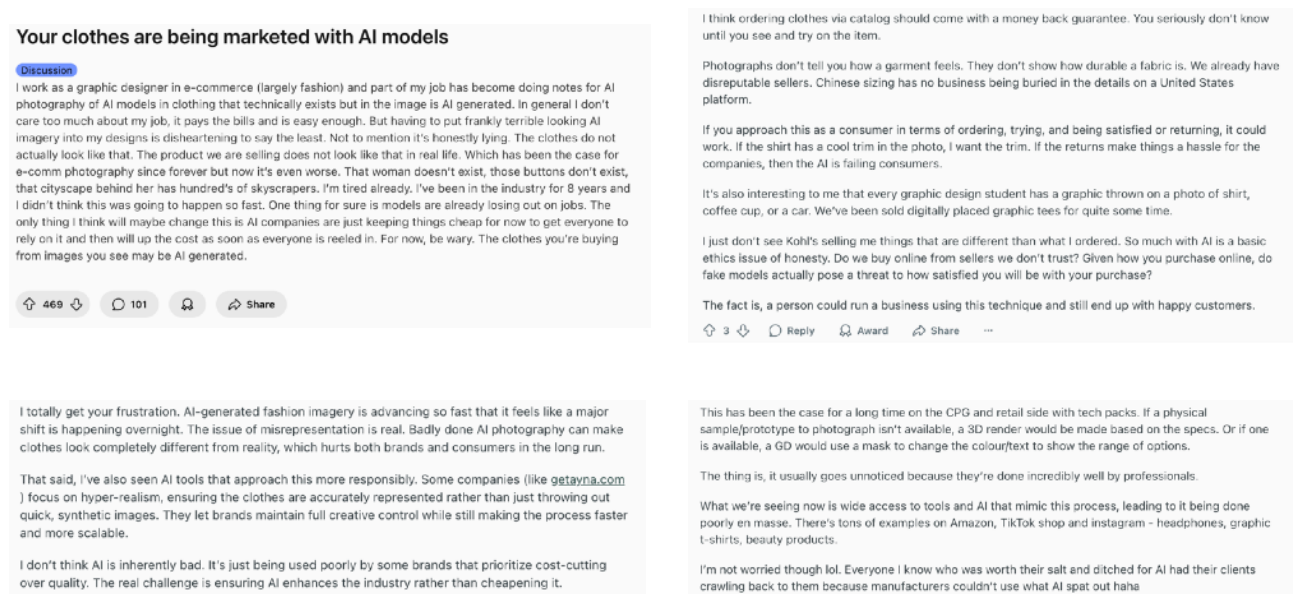


Figure 6: Reddit Post: Your Clothes are being marketed with AI models

A majority (68%) of users expressed concerns over transparency, viewing AI models as a low-effort alternative that decreases consumer confidence and purchasing power. Many users criticised retailers for prioritising cost-cutting measures over genuine consumer engagement, arguing that the absence of real models weakens the credibility of online shopping experiences. Others, however, viewed AI-generated models as an inevitable evolution of digital retail due to cost-effectiveness and efficiency. One user observed that "From the testing I've done, any product associated with an on-model image gets a higher purchase rate and lower returns." suggesting that AI-generated models may be more effective than having no model at all. This insight highlights a crucial paradox in e-commerce even though AI Deepfake models raise ethical concerns regarding transparency and authenticity, they fairly deliver measurable business benefits by driving consumer engagement and reducing uncertainty in online shopping.

Yet, this argument fails to address the long-term implications of AI-generated imagery, short-term metrics such as conversion rates and return reductions may validate the effectiveness of AI models, but they do not necessarily equate to consumer trust or brand loyalty. Some users drew comparisons to long-standing industry practices, arguing that the use of AI in fashion marketing is merely an extension of existing digital manipulation techniques. One commenter pointed out that graphic T-

shirts have been sold for decades using stock images with photoshopped designs, reflecting that AI-enhanced imagery is not fundamentally different from traditional photo editing techniques. This perspective challenges the conception that AI-generated visuals are entirely disruptive, positioning them as a continuation of digital marketing strategies that have long shaped consumer perception instead.

Furthermore, industry professionals also expressed divided opinions. Some e-commerce employees voiced concerns over long-term consequences, fearing that excessive reliance on deepfake imagery could destroy consumer trust and damage brand credibility. Others showed a practical attitude, acknowledging that while AI-generated models may raise ethical situations, their implementation is simply part of the evolving job landscape. As one industry insider bluntly stated, "At the end of the day, it's just a job."

4.3 Ethics & Labour Displacement

The ethics of Deepfake models remain a highly debated topic, with perspectives divided between those who prioritise technological advancement and business adaptability and those who argue that they diminish human creativity and displace labour within the industry.

On Reddit, users tend to show empathy toward industry professionals affected by AI. One Reddit user mentions AI's creative limitations, emphasising that 'A photographer's talent is not in his equipment or the number of pixels or the clarity of the images, but in his ability to create a moment for the model... it's about creating it, or even catching it.' This sentiment underscores the idea that human artistry is rooted in intuition, storytelling, and emotional depth, thus cannot be fully replicated by artificial intelligence.

In contrast, conversations on LinkedIn (Figure 7), a platform primarily for professional networking and academic discourse, adopt a more pragmatic and critical stance. The post and comment focus on the implications of AI-driven automation on labour markets, particularly the displacement of photographers, models, and other creative professionals. Rather than solely questioning the authenticity of AI-generated imagery, LinkedIn users critically assess how businesses will manage the efficiency, cost reduction, and ethical responsibility in adopting AI-driven solutions. One user suggested that as AI continues to reshape the creative industries, the key challenge remains balancing technological advancement with ethics, so that innovation does not negatively impact human craftsmanship and fair labour practices. It is essential for all parties involved, including artists, technologists, politicians and companies, to work together to develop AI in a way which is both innovative and ethical.

If AI can generate the face and body of a top model then there is no need for a real photoshoot.

And if that becomes a normal practice then models will be available all the time.

I think, as we are working on ai technology, we are just creating random hypothetical use cases.

People should know the difference between technology and product.

Like · 1 | Reply · 1 Reply

Figure 7: LinkedIn Post

Cultural appropriation represents another critical ethical concern associated with AI Deepfake technology in fashion. One notable incident occurred in 2023 when model Shereen Wu's runway photos for Michael Costello were altered using AI, replacing her face with that of a white model (The Guardian, 2023). This digital manipulation effectively erased Wu's identity, making it appear as though she had been entirely replaced. For a model, such exposure on a global runway is not only a career milestone but also a reflection of their artistic and professional identity. The alteration of her image through AI not only undermined her dignity and professional achievements but also raised concerns about racial representation and inclusivity in the fashion industry.

The key issue lies in the intent behind such modifications— using AI Deepfake technology not as a means of innovation but as a tool to satisfy aesthetic preferences that reinforce exclusionary beauty standards. Rather than promoting diversity, this practice marginalises non-Western identities and upholds dominant Eurocentric ideals, ultimately harming both individual careers and the broader industry's push for inclusivity. As one commentator from Vogue stated, 'Wu was erased from the digital world, which matters because the digital world is a real place for models. It leads to real economic and visible pathways' (Bovell, 2023).

Additionally, the author posted a targeted Reddit question about AI Deepfake technology in cross-border fashion e-commerce to explore consumer attitudes more precisely, distinguishing it from general Deepfake applications. User responses suggest that cultural appropriation is only considered as a problem if it offends consumers or models. Many argue that if models consent to their faces being altered and retailers profit from the practice, it remains commercially applicable.



Figure 8: Shereen Wu at Michael Costello Runway
Vs. Official Instagram story feed

4.4 Regulation & Industry Standards

Most users on Reddit (78%), particularly those in the Ethics community, consider that regulation is essential to protect consumers' rights and awareness of the content they engage with. Many emphasise that transparency should be a legal requirement rather than an optional ethical practice. One user considered, "I can imagine a day where we will see the creation of a verification symbol of 'no AI-generated content,' but it will be a small segment of the market." It suggests a potential industry shift where human-created content becomes a niche offering, much like organic or fair-trade certifications in other industries. One highly engaged post (Figure 9), receiving over 15,000 likes and 800 comments, reflects Chinese perspectives on the legal side of AI Deepfake technology and e-commerce, particularly in terms of copyright infringement. One user noted the difficulty of defending image rights, arguing that if an e-commerce retailer is only presenting the clothing rather than a recognisable face, it becomes nearly impossible to claim copyright infringement. Among the 800 comments, 62% of users expressed concerns about the ethical and legal implications of AI-generated models, encouraging professional models to protect their image rights.

Many cross-border e-commerce retailers actively share tutorials about AI-driven tools, often with limited awareness of the potential legal implications. They prioritise market efficiency over regulatory concerns in order to maintain speed and profitability. Despite acknowledging the moral and regulatory implications of AI-generated models, they view Deepfake technology as a practical and cost-effective solution. A key advantage cited by these retailers is the flexibility AI-generated images provide in market segmentation. The same product can be marketed differently across regions, with non-AI images used for domestic Chinese consumers, while AI-enhanced visuals are tailored for international audiences based on market preferences. This strategy allows them to maximise consumer appeal without additional investment or adapting marketing materials manually.

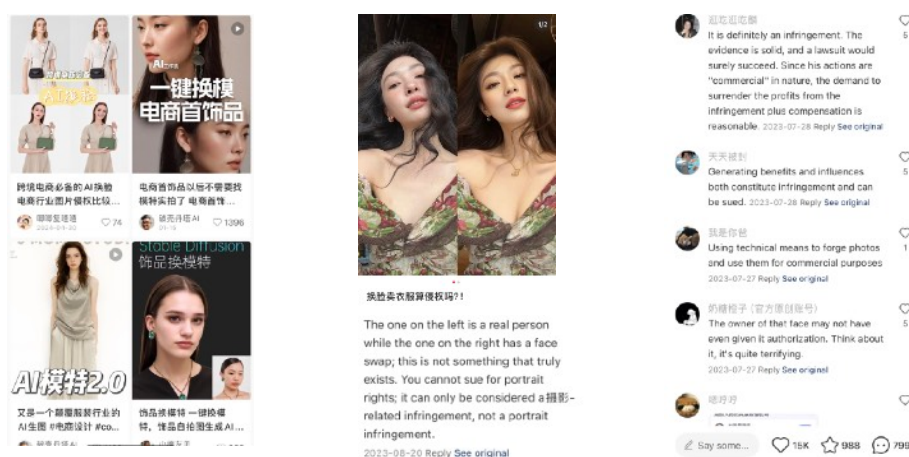


Figure 9: Rednote Deepfake Tutorials

This approach not only enables businesses to maintain creative control and marketing flexibility but also reduces the ongoing financial and legal responsibilities associated with traditional model endorsements. Retailers view copyright management as a driving factor in adopting AI-generated models — the adoption of well-known or professional models introduces legal complexities, including licensing agreements, intellectual property rights, and contractual obligations. By contrast, AI-generated faces are not bound by individual rights, without licensing agreements and ongoing compensation. This reduces operational costs and minimises legal risks, making AI-generated models an increasingly attractive alternative in the fast-paced e-commerce landscape.

The findings of this research provide insights into the perceptions and attitudes of both consumers and industry professionals regarding the use of AI-generated Deepfake models in cross-border e-commerce. The discussions across Reddit, Rednote, and LinkedIn reveal varying viewpoints influenced by cultural, economic, and professional factors. Over half of consumers and professionals across these platforms express concerns about the ethical implications of Deepfake technology. However, their specific concerns and priorities are different based on platform, cultural background, and industry perspective. On Rednote, Chinese users place an emphasis on aesthetics and commercial efficiency over ethical considerations. They are most concerned with whether AI-generated pictures accurately represent the product's real-life quality and appearance. They also display uncertainty regarding intellectual property rights and consumer protection laws. The global Reddit community, on the other hand, prefers realistic product images over AI-enhanced graphics. Among their main concerns are transparency, consumer trust, and labour ethics. Compared to LinkedIn discussions, these are more business-oriented and regulatory-focused examining the impacts of AI on corporate strategies, labour markets, and compliance with emerging regulations.

As a result, Chinese e-commerce retailers often prioritise the efficiency and aesthetic appeal of AI-driven visual content. Within a high-context communication environment, as defined by Hall (1976), this strategy may be considered acceptable because meaning is embedded in context, tone, and visual cues rather than in explicit statements. The visual presentation alone is seen as sufficiently communicative, and consumers may intuitively accept the use of enhancements or virtual imagery, especially in fast-moving industries like fashion, may involve various forms of enhancement or virtual creation without the need for explicit verbal confirmation of AI involvement. However, this approach contrasts sharply with the expectations of consumers and professionals from low-context cultures. For these audiences, the absence of clear disclosure regarding the use of deepfake technology in marketing materials may be perceived as a lack of transparency or even an attempt at deception. As Würtz (2006) highlights, intercultural differences in web-based communication reveal how Western audiences tend to interpret ambiguous visuals more critically, especially when ethical boundaries around authenticity and representation are at stake. In low-context communication, the expectation is that if content is generated or manipulated by AI, this should be explicitly stated.

Table 1: Cultural Communication Norms and Ethical Perceptions of Deepfake Use in Cross-Border Fashion E-commerce

High-Context Culture (China)	Low-Context Culture (Western Countries)
Indirect, implicit communication	Direct, explicit communication
Visuals are self-explanatory	Visuals require disclaimers or context
Trust built through aesthetics & harmony	Trust built through transparency & clarity
AI-generated visuals seen as efficient	AI-generated visuals need explicit disclosure
Assumes shared cultural understanding	Assumes no shared context
Less focus on legal disclosure	Greater emphasis on ethical/legal compliance

Table 2: Cross-Platform Thematic Breakdown: Sentiments Toward AI Deepfakes in Fashion Retail

Theme	Example Quote	Frequency	Sentiment
Recognition & Aesthetic Appeal	It’s just being used poorly by some brands that prioritise cost-cutting over quality. The real challenge is ensuring AI enhances the industry rather than cheapening it. (Reddit user, r/Graphic Design)	40%	Negative
Transparency and Consumer Trust	“If every model is AI-generated, how do we know what’s real? Brands are selling illusions, not clothes.”(Reddit user, r/Fashion)	68%	Negative
Ethics and Labour Displacement	“This isn’t innovation—it’s erasing jobs. Human models, photographers, and stylists are being replaced by algorithms.”(Reddit user, r/Ethics)	52%	Negative
Regulation & Industry Standards	“If brands won’t label AI models, governments need to force them. Transparency isn’t optional.” (Reddit user, r/ArtificialIntelligence).	78%	Postive

5. Discussion & Conclusion

The rapid growth of deepfake technology in cross-border e-commerce requires a critical assessment of its multiple implications for regulatory supervision, cultural adaptation and socio-economic equity. The key priority is the development of regulatory framework for AI transparency, consumer protection, and ethical labour practices. Governments and industry regulators should consider policies that require explicit disclosure of AI-generated content to maintain consumer trust in increasingly blurred digital marketplaces. Ethical guidelines should also address accountability in AI training practices, particularly about the use of copyrighted material and culturally sensitive data.

This study applies Hall's (1976) theory of high-context and low-context communication to the field of digital fashion e-business. It demonstrates how cultural communication styles affect consumers' interpretation of AI-generated content. The findings revealed that the perception of transparency and deception are not universal, culturally constructed instead. In high-context cultures such as China, minimal disclosure and an emphasis on visual harmony may be accepted, or even preferred. However, in low-context cultures such as those in the UK, US and much of Western Europe, explicit communication and AI disclosure are often considered vital for building consumer trust. Cross-border retailers should therefore consider implementing context-sensitive disclaimers, transparency signals or AI labelling systems, depending on the cultural expectations of their target audience. Therefore, cross-border e-commerce retailers should adopt regionally tailored approaches.

Furthermore, the discussion regarding job displacement and the ethical use of AI in marketing is a reminder that brands should consider the broader implications of automation. Since AI has the potential to reduce costs and streamline marketing operations, it also raises concerns about the reduction in the role of human models, photographers and creative professionals. Companies should explore hybrid models that combine AI technology development and opportunities for human creative professionals.

5.1 Limitation

This study provides a pioneering exploration of AI Deepfake technology in cross-border e-commerce, particularly within the Chinese e-business sector. Given that this is a relatively new phenomenon, there is a lack of existing academic research on how impact global e-commerce, consumer perceptions, and ethical considerations. As one of the first researchers to investigate this topic, this study embodies an initial foundation for future scholarly work. However, several limitations must be acknowledged.

First, the research primarily relies on netnography, mainly drawing insights from social media platforms such as Reddit and Rednote. Even though this provides valuable and real-time perspectives from individuals directly engaged in e-commerce, it lacks controlled experimentation or structured interviews that could offer deeper, more targeted insights. The absence of face-to-face qualitative interviews or empirical experiments limits the ability to verify the authenticity of responses, underlying motivations, and long-term industry impact. Moreover, the study focuses on textual discourse and user comments rather than providing a systematic visual analysis of the AI-generated content itself. A future multimodal approach combining visual semiotics and cross-

cultural analysis could offer a more comprehensive understanding of how visuals convey meaning across cultures.

Second, this study does not focus on a specific demographic group. The study draws primarily on data from Reddit, Rednote, and LinkedIn, each of which attracts distinct user demographics — lacks the depth of a segmented consumer or industry analysis. Future research could expand to include survey-based or experimental studies across varied consumer groups. While Hall's high-context vs. low-context distinction provides a useful lens, it risks oversimplification. Cultural communication styles are fluid and can vary within populations by age, education, or digital exposure. Future studies should combine micro-level cultural segmentation with Hall's macro framework to deepen the analysis. Future research could also benefit from targeting specific stakeholders, such as fashion brands, professional models, e-commerce business owners, or policymakers.

Finally, ethical and legal considerations remain under-explored due to the rapid evolution of AI technology. Regulatory responses may vary significantly across geographies and industries as Deepfake applications continue to evolve. This study does not provide comprehensive legal analysis or policy recommendations, although it highlights emerging debates. Future studies could examine how different countries regulate AI-generated models in e-commerce, consumer purchasing intention, and also how luxury fashion differs due to this study focusing on fast fashion in cross-border e-commerce.

5.2 Conclusion

The integration of Deepfake technology into Chinese cross-border fashion marketing represents a significant shift in digital business practices, offering both innovative opportunities and complex challenges. This study employed a netnographic approach and the application of Hall's communication theory, provides a culturally grounded framework for understanding of how Deepfakes are reshaping marketing strategies and consumer engagement in this sector. The following discussion delineates the theoretical and practical contributions of this research.

Traditional digital marketing frameworks emphasise authentic content and influencer partnerships to build consumer trust and brand loyalty. The advent of deepfake technology challenges these paradigms by introducing synthetic yet highly realistic content into marketing strategies. This study contributes to digital marketing theory by exploring how Deepfake can be utilised to create personalised and scalable marketing content, potentially redefining concepts of authenticity and consumer perception in the digital age. The paper also extends Hall's theory to the context of digital commerce and synthetic media, demonstrating the impact of communication style on ethical interpretation and consumer trust in AI-driven content. This approach positions culture as a mediator in the perception of technology, which is not a topic that has been fully explored in previous literature on digital retail.

Netnography, as a qualitative research method, focuses on understanding online cultures and communities through the analysis of digital communications. By applying netnography to examine the use of Deepfake in social media marketing, this research extends the methodology's applicability to emerging technologies and their impact on consumer behaviour. It demonstrates

that netnography can effectively capture the dynamic interactions and perceptions surrounding innovative digital practices within online communities. The proliferation of deepfake technology introduces a new dimension to consumer behaviour studies. This research provides empirical insights into how consumers perceive and interact with synthetic media in marketing contexts. Findings suggest a complex interplay between novelty, trust, and ethical considerations, offering a foundation for future studies on consumer responses to artificial content and its implications for brand-consumer relationships.

Deepfake offers a scalable solution for content generation, allowing brands to produce a multitude of marketing materials rapidly. This efficiency is particularly advantageous in the fast-paced fashion industry, where trends evolve swiftly, and timely content dissemination is crucial. By leveraging deepfake technology, brands can quickly adapt to emerging trends and consumer preferences, maintaining a competitive edge in the market. The deployment of deepfake technology in marketing requires careful consideration of the ethical implications and compliance with emerging regulations. Brands need to consider issues of consent, intellectual property rights and potential consumer deception. Establishing transparent practices and maintaining ethical guidelines are essential to mitigate the risks associated with the misuse of synthetic media. Proactive engagement with regulatory bodies and the development of industry standards can aid in fostering responsible use of deepfakes in marketing.

Building upon the insights garnered from the netnographic analysis of deepfake applications in Chinese cross-border fashion marketing, several avenues for future research emerge. Firstly, expanding the demographic and geographic scope of studies could provide a more comprehensive understanding of consumer perceptions across diverse markets. Investigating how different age groups, cultural backgrounds, and regional contexts influence the reception of Deepfake-driven marketing content would offer valuable insights for tailoring strategies to varied audiences. Secondly, a deeper exploration into the ethical and legal ramifications of deploying deepfake technology in marketing is warranted. As the line between authentic and synthetic content blurs, examining consumer trust dynamics and the potential for deception becomes crucial. Research focusing on the development of regulatory frameworks and industry guidelines can aid in establishing standards that protect consumer interests while fostering innovation. Thirdly, longitudinal studies assessing the long-term impact of Deepfake utilisation on brand reputation and consumer loyalty would be beneficial.

Understanding whether initial novelty translates into sustained engagement or leads to scepticism over time can inform the strategic deployment of such technologies. Additionally, comparative analyses between deepfake-generated content and traditional marketing approaches could elucidate the effectiveness and return on investment associated with this emerging tool. Methodologically, combining netnography with other qualitative and quantitative approaches, such as in-depth interviews and surveys, could enrich data triangulation and provide a holistic view of the phenomenon. Finally, exploring the psychological effects of deepfake content on consumer behaviour, including potential desensitisation or altered perceptions of reality, presents a critical area for inquiry. As Deepfake become more prevalent, understanding their cognitive and emotional impact will be essential for both marketers and policymakers aiming to navigate the complexities of this disruptive innovation responsibly.

Conclusively, this study underscores the transformative potential of deepfake technology in Chinese cross-border fashion e-commerce, highlighting both its innovative applications and the

accompanying challenges. Theoretically, it expands existing Hall's cultural communication theory and netnographic frameworks to encompass the complexities introduced by synthetic media. Practically, it offers actionable insights for marketers seeking to harness deepfakes responsibly, emphasising the importance of ethical considerations and strategic implementation. As Deepfake technology continues to develop, ongoing research is essential to navigate its implications, ensuring that its integration into marketing practices aligns with consumer interests and societal values.

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Appendix

Figure 1: O'Neill, T. (2025). *Deep-fashion, using AI face-swapping for retail*. [online] Timeundertension.ai. Available at: <https://www.timeundertension.ai/imagine/mf9oylg354ioooxlpohy15b0t1v32b> [Accessed 22 Feb. 2025].

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Figure 5: Reddit.com. (2025). *Reddit - Dive into anything*. [online] Available at: https://www.reddit.com/r/graphic_design/comments/1etrqgc/your_clothes_are_being_marketed_with_ai_models/ [Accessed 20 Feb. 2025].

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Figure 7: Demopoulos, A. (2023). Model says her face was edited with AI to look white: 'It's very dehumanizing'. *The Guardian*. [online] 4 Nov. Available at: <https://www.theguardian.com/fashion/2023/nov/04/fashion-model-ai-image-tiktok>.

Figure 8: Xhslink.com. (2024). *换脸卖衣服算侵权吗? ! - 小红书*. [online] Available at: <http://xhslink.com/a/PuCr2GAX5VB6> [Accessed 20 Feb. 2025].

Reddit Comment:

- Wouldn't this land into "false advertising" and isn't that illegal?
- Considering most product photos of t-shirts are generic stock photos with the design photoshopped on top, this isn't really anything new.
- It feels like a scam to me and, if I can avoid it, I won't buy clothes "displayed" that way. It's so low effort.
- It loses clients trust in our quality of work and our clients potential clients trust.
- We've been sold digitally placed graphic tees for quite some time.
- I can imagine a day where we will see the creation of a verification symbol of "no AI-generated content", but it will be a small segment of the market.
- Generative AI isn't *good*. It's just *good enough*. But companies are fine with good enough, especially if it costs pennies on the dollar compared to having a human do the work.
- From the testing I've done any product associated with an on model image gets a higher purchase rate and lower returns.
- A photographer's talent is not in his equipment or the number of pixels or the clarity of the images, but in his ability to create a moment for the model, to *feel* in a certain way, a sense of safety while they're being vulnerable. It's not about *producing* something, it's about *creating* it, or even *catching* it, you know how we make a "mistake" sometimes and it just turns out extremely unique and at times even non-repeatable...
- People don't know most of the images online are AI nowadays.
- It's just being used poorly by some brands that prioritise cost-cutting over quality. The real challenge is ensuring AI enhances the industry rather than cheapening it.
- As long as it's decent and affordable people will buy