



Human-Like and Humanoid Virtual Influencers (HVIs): Transforming Digital Marketing and Consumer Engagement

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ABSTRACT: This study explores the role of human-like and humanoid virtual influencers (HVIs) in digital marketing and consumer engagement. Virtual influencers, computer-generated entities designed to emulate human behavior and appearance, became powerful tools in marketing, offering unprecedented control, consistency, and brand alignment. Drawing on data from platforms such as Storyclash, Dream Farm Agency, and Influencer Marketing Hub, this research examines the impact of prominent HVIs, including Lu of Magalu, Lil Miquela, and Shudu, across various industries such as fashion, e-commerce, and music. The study highlights the effectiveness of HVIs in fostering audience engagement through visually dynamic content and storytelling while addressing ethical concerns, including transparency, authenticity, and consumer trust. By analyzing their social media presence, follower metrics, and industry affiliations, the research highlights the advantages of HVIs in mitigating risks associated with human influencers, such as personal unpredictability, while acknowledging challenges in replicating the emotional depth of human interactions.

This paper provides a comprehensive evaluation of HVIs' strategic positioning in brand management, advertising, and sales. It concludes with an assessment of their broader implications for marketing ethics and the integration of artificial intelligence in shaping future consumer-brand relationships. The findings contribute to the growing discourse on the potential of HVIs to redefine digital marketing practices and consumer perceptions in the evolving landscape of influencer marketing.

Keywords: virtual influencer (VI), human-like virtual influencer (HVI), humanoid virtual influencer (HVI), AI in marketing, AI in advertising, Digital Marketing

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1. Introduction

The rise of virtual influencers (VIs) introduced many changes in marketing and social media engagement. These computer-generated entities are designed to emulate human behavior, appearance, and interaction, leveraging artificial intelligence and advanced digital rendering technologies to connect with audiences across platforms such as Instagram, TikTok, and Facebook (Arsenyan & Mirowska, 2021; Sands et al., 2022). The emergence of VIs reflects the increasing intersection of technological innovation and marketing strategies, with the global influencer marketing market projected to reach \$24 billion in 2024 (Pérez-Sánchez et al.2024).

Unlike human influencers, virtual influencers offer brands greater control over content and behavior, mitigating risks associated with human errors or unpredictable personal decisions that could harm brand reputation (Ham et al., 2023; Kim & Park, 2023). Their ageless, meticulously curated personas are free from the constraints of physical reality, enabling continuous alignment with brand strategies. However, this same controllability raises ethical questions, particularly regarding transparency and authenticity in consumer engagement (Bartz et al., 2013; FTC, 2022; Kim and Wang 2023). Critics argue that the lack of transparency around the creators and motivations behind these entities risks undermining consumer trust,

a critical factor in the success of any marketing strategy (Kádeková & Holienčinová, 2018).

Despite these concerns, virtual influencers have proven highly effective in fostering engagement through immersive storytelling, visually appealing content, and the novelty of their digital existence (Conti et al., 2022). They operate successfully across industries, from fashion and e-commerce to music and public interest campaigns, highlighting their versatility and potential as transformative tools in digital marketing (Kim et al., 2023; Jarek & Mazurek, 2019). However, consumer perceptions remain divided; while some audiences view VIs as innovative and engaging, others question their authenticity and ability to replicate the emotional depth of human influencers (De Veirman et al., 2017; Li & Ma, 2024).

This article aims to explore the role of human-like virtual influencers in shaping consumer behavior and digital marketing practices. It examines the balance between their technological advantages – such as consistency, control, and risk mitigation – and the ethical and perceptual challenges they pose, including questions about agency, authenticity, and transparency. Drawing on data from leading platforms like Storyclash, Dream Farm Agency, and Influencer Marketing Hub, the study provides a comparative analysis of key VIs, including Lu of Magalu, Lil Miquela, and Shudu. By evaluating their industry impact, audience engagement, and ethical implications, this research contributes to the ongoing discourse on the integration of artificial intelligence in marketing and its broader societal implications.

2. The concept of marketing

The notion of marketing can be analyzed in two different aspects. According to the classical definition marketing is included in all business activities which are conducted to manage the flow of goods and services from the person who produces them to people who will purchase them.

Marketing in a broader sense is defined as an action that is present in the community in which the demand for economic services is increased through creation, promotion and physical distribution (Berman 1990). The concept of marketing is related to the word marketplace from which it originally derives, it is related to business in which the organization and the customers are involved, and from which both parties can benefit from. The exchange between the customers and the marketer is a main aim of marketing as a discipline. In order to be effective, customers must be provided with products adequate for the price by marketers (Blythe 2005).

The term marketing covers many aspects such as institutions, processes, communication, delivery and offers that are beneficial to customers and general public. According to Packard (in Lamb 2011, 3) „Marketing is too important to be left only to the marketing department”. Marketing is not only selling goods, it is also beneficial for customers. This is the field which is based on long-term relationships that are profitable for everyone involved. According to Kotler and Armstrong (2012) marketing is focused on customers and on valuable relationships with them. Attracting new clients by satisfying them with the best quality products as well as developing existing customers by providing them with satisfaction is included in the dual purpose of the previously mentioned idea of marketing. Currently, the branch of marketing is more developed, marketing is no longer defined as just selling, but also as satisfying the needs of the consumers (Kotler and Armstrong 2012).

Marketing consists of four main instruments like product, promotion, place and price known as 4Ps. Selling the product to a specific group of customers at the right price while using the best methods of promotion is defined as marketing (Briggs 2003, 35). The marketing involves all activities like maintaining mutual relationships with partners and customers in order to meet the objectives of both parties. The fulfilment of the promises by both parties guarantees the achievement of the goal (Grönroos as cited in Brassington, 2013).

McKitterick and Keith (in Fernando et al., 2012) introduced the idea of marketing. It is a business theory in which the client and the company's activities are distinguished as the most important entities. Marketing is a process that consists of two stages, as a technical and a social process. The first one is related to the company, with the implementation of business goals, for example price and product, and this stage is concentrated only on commercial goals. The second of these processes focuses on society, and on

transactions between participants (Bartels in Liu, 2017).

According to American Marketing Association marketing consists of some processes that aim at managing the relationships with customers in a beneficial way, provide them with some values and communicate with them (Arens, 2009).

In this context, a specialized language plays an important role, it uses descriptive and evocative vocabulary to emphasize unique features and experiences, creating compelling imagery to engage potential clients (Skubis, 2020a). Marketing with its advertising language is a communication process that combines linguistic and visual elements to influence perceptions, evoke emotions, and craft narratives around products or services (Skubis, 2022). The research by Skubis and Mosek (2024) highlights the significant impact of linguistic strategies in advertising, demonstrating how the language of marketing can effectively engage and persuade clients. By analyzing advertisements from travel agencies, the study reveals the strategic use of lexical, syntactical, and rhetorical elements to attract readers and encourage them to purchase travel packages.

2.1. Marketing strategies

Strategy and marketing plans are essential elements of the management process. Discipline and flexibility must be combined to develop a marketing strategy which will be appropriate. Companies are obliged to adhere to the strategy and the key element is the continuous improvement of this strategy (Kotler 2006). As for marketing strategies, they are determined by the product manager. It has to be identified what will satisfy the offers on the market. The next step undertaken by a manager is to determine the competitive position the products give to the market. In order to achieve the marketing strategy, areas such as sales, finance, human resources and production are crucial (Kotler 2006).

According to Pomykalski (1999) marketing strategies have been introduced to ensure success in the market. Marketing strategy is a decision-making process, it is defined as identifying issues that are essential and it is related to solving the previously undertaken goals. With these strategies are actions the intended goals in the company can be achieved. The objective of marketing strategies includes, for example marketing mix, identifying threats that may occur on the market, controlling strategic effects in a systematic way, identifying the company's goals and timeframe a specific strategy will be introduced, and by whom it will be done. The combination of marketing parts such as product, price, distribution and promotion form the basis of a marketing strategy (Pomykalski 1999). It is essential to implement marketing strategies for a company to be successful because they include understanding the client's needs (Fernando 2012).

According to Tarmizi (2021) companies compete with each other to get as many customers as possible and thus sell more products, they use marketing strategies to achieve this goal. The previously mentioned marketing strategies should be developed in a very precise way to have a positive impact on recipients. Product, price, distribution as well as promotional methods are part of them. These four activities are called the Marketing Mix. Different strategies are implemented by each company. Enterprises are aware that more refined marketing strategy will be associated with more sales (Tarmizi 2021).

Customer experience is increasingly viewed as a pivotal factor for success among service providers, influencing strategies at strategic, tactical, and operational levels within organizations. As marketing behaviors change from traditional methods to digital interactions, the ability to engage customers effectively has become central to create memorable service experiences. The digital platforms offer new ways to influence consumer decisions and behaviors.

The language of marketing and advertising plays a critical role in developing and executing effective marketing strategies by enabling clear and engaging communication with clients. Advertisers use metalanguage to highlight key points, clarify intentions, and build stronger connections with their audience, making their messages both informative and compelling (Skubis, 2016, 2020b).

Companies now focus on understanding consumer preferences and behaviors through digital analytics to tailor their marketing and advertising strategies effectively. This not only enhances customer satisfaction

but also drives better decision-making within the company, aligning operational practices with consumer expectations to optimize the overall customer experience (Skubis and Akahome 2022; Wołk et al. 2021).

2.2. E-marketing

Due to the development of the Internet, electronic marketing has become common among companies that use it to make many business transactions, such as online trading, sales and purchases. The use of electronic marketing has influenced the increase in profits and the expansion of markets.

E-marketing allows marketers to gain a competitive advantage in today's market, but despite its effectiveness, there are some difficulties that require efforts to counteract negative results while building customers' trust. With the growing success of modern institutions, e-marketing has emerged as an innovative concept within the transactional market. Often referred to as a business strategy, it serves multiple purposes, including addressing and fulfilling customer needs.

The above-mentioned e-marketing is closely related to a few methods, the most significant is marketing through search devices, advertising or emails, and interactive advertising (Jaas 2022). E-marketing is a field that is developing very quickly and has a significant impact on customers and the market. As a result, companies have been forced to include e-marketing as a main form of marketing. (Andreki and Yazdanifard 2014).

3. Artificial Intelligence and its role in modern marketing

Artificial intelligence (AI) is defined as intelligence exhibited by machines (Siau in Chintalapati and Pandey, 2022) or as intelligence utilizing sensors to perceive and effectors to respond to environmental stimuli (Russell and Norvig, as cited in Chintalapati and Pandey, 2022). AI encompasses capabilities such as decision-making, image and text recognition (e.g., for payment systems), and voice recognition (e.g., virtual assistants on mobile devices). Moreover, AI is applied in logistical contexts, such as stock control in warehouses (Jarek and Mazurek, 2019).

AI is classified as a field of science that helps machines solve complex problems in a more human-friendly way. This typically involves replicating aspects of human intelligence and implementing them as algorithms designed to function effectively within computer systems. Games, natural language processing, robotics, neural networks, and expert systems are all included in artificial intelligence. Notably, while AI is often associated with computer science, it also finds connections in fields such as mathematics, psychology, and biology (Bansla and Bansla, 2012).

One of the most important capabilities of artificial intelligence, especially in business management, is to personalize customers' experiences (Ameen et al., Daqar and Smoudy as cited in Senyapar 2024). The process of replicating human-like intelligence through computer systems encompasses learning, reasoning, problem-solving, as well as language understanding and perception (Ma & Sun in Senyapar 2024). The process of creating algorithms and systems that allow computer to behave similarly to human is included in the main goal of artificial intelligence (Jutel et al. as cited in Zumstein et al. 2024).

Artificial Intelligence is getting more and more popular in various areas ranging from business, medicine, education, science, and automotive industry. Research interest in AI dates back to the mid-20th century. Initially popular among engineers and computer scientists, AI's potential has expanded into broader applications, including marketing and management.

In marketing, AI plays a particularly significant role by using data to analyze customer needs, improve purchasing processes, and help marketers achieve greater profits (Jarek and Mazurek 2019). Artificial intelligence significantly enhances the marketing process by enabling the collection of customer data, the dissemination of information, and the application of advanced algorithms. AI helps to direct products to each customer individually. In this way, buyers do not have to waste time searching for products because everything is personalized according to their needs (Haleem et al. 2022).

AI tools in marketing and revenue management enhance understanding of market trends, customer

behavior, and competitive dynamics. They enable real-time dynamic pricing to optimize revenue and competitiveness and support personalized marketing campaigns to improve engagement and conversion rates (Skubis 2024)

Artificial intelligence is indispensable for companies, as it enables them to analyze vast amounts of data that would otherwise be impossible to process efficiently. AI can help to automate everyday tasks, for instance writing posts on social media and also predicting future consumers' behavior. In summary, AI reduces costs for the company, affects automation, helps in decision-making process and can minimize errors (Asi and Mojada 2023). Artificial intelligence has profoundly transformed the marketing industry, particularly in the areas of personalization and automation. Traditional marketing has evolved into digital interactions, where AI-driven tools like chatbots not only enhance customer satisfaction but also tailor content to individual users (Skubis and Kołodziejczyk).

4. Virtual Influencers: a modern phenomenon in digital marketing

According to Statista (2024a) Influencer marketing has become a leading online marketing strategy, leveraging social media personalities to engage millions of users daily for entertainment, inspiration, and product recommendations. By 2023, the global influencer marketing market reached \$21.1 billion, over three times its 2019 value. This growth reflects the industry's maturation, with increasing investments in influencer marketing platforms facilitating ever more profitable collaborations between brands and creators.

The emergence of virtual influencers represents a significant evolution in the digital marketing landscape. Virtual influencers are computer-generated characters, designed with photorealistic or stylized aesthetics, that simulate human traits, behaviors, and interactions on social media platforms. These entities are employed by brands to engage with audiences, promote products, and build brand narratives.

Virtual influencers are unique in their ability to maintain a consistent and controlled image. Unlike human influencers, they do not age, experience personal scandals, or demand extensive financial compensation (Caliandro & Graham, 2020). Furthermore, their actions and messages are entirely orchestrated by their creators, allowing for precise alignment with marketing strategies. This level of control has attracted major brands such as Balmain, which introduced its own digital model army in 2018, and Samsung, which collaborated with virtual influencer Lil Miquela to promote its Galaxy phones (Hiort 2022).

Lil Miquela, a popular virtual influencer with 2,5 million followers on Instagram (December 2024), exemplifies the broad appeal of these entities. Created by the firm Brud, Miquela interacts with her audience through posts and comments, mimicking the persona of a young and socially conscious individual. Such characteristics resonate with Generation Z and millennial audiences, who prioritize authenticity and social responsibility.

According to Statista (2024b), virtual influencers are gaining traction, especially among younger audiences. In a 2022 U.S. study, 58% of respondents followed virtual influencers, with 75% of Gen Z adults engaging most actively. While younger consumers showed greater interest in purchasing products recommended by these avatars, such behavior remains less common overall. Content and storytelling were the primary drivers for following virtual influencers, while lack of interest or awareness (24% were unaware of their existence) were the main barriers. The most popular platforms for following virtual influencers included YouTube and Instagram, followed by TikTok and Facebook.

5. Ethical and Practical Considerations

Despite their popularity, virtual influencers raise several ethical concerns. Their simulated authenticity may mislead audiences into forming parasocial relationships, believing that these entities possess human-like agency and emotions (Caliandro & Graham, 2020). Additionally, their use can obscure the lines of transparency in advertising. For instance, consumers might struggle to discern whether a post by a virtual

influencer is a paid promotion or an organic expression of their “persona”. Regulatory agencies such as the Federal Trade Commission (FTC) have emphasized the need for clear disclosures in influencer marketing, a guideline that applies to virtual influencers as well (Kádeková & Holienčinová, 2018).

From a practical standpoint, virtual influencers offer certain advantages over human influencers. They can be designed to target specific demographics and can work continuously without limitations. However, their effectiveness relies heavily on the creativity and technical expertise of their creators. Advanced technologies such as artificial intelligence (AI) and 3D rendering are often employed to enhance their believability and relatability.

The integration of humanoid robots into societal roles raises complex ethical concerns, particularly in the context of virtual influencers and sex robots. As noted by Skubis (2024a), advancements in artificial intelligence (AI) enable the creation of machines that mimic human appearance and behavior, often blurring the boundaries between technology and human interaction. This development, while innovative, necessitates a robust ethical framework to address issues such as privacy, data security, and the potential normalization of harmful behaviors. For example, the promotion of sex robots as substitutes for authentic human relationships has sparked debate among scholars and practitioners (Richardson, 2016; Skubis, 2024b; Skubis 2024c).

Critics argue that these technologies risk dehumanizing interpersonal connections, fostering social isolation, and diminishing empathy. Furthermore, the European Parliament has emphasized the need for transparent guidelines and regulatory frameworks to ensure these technologies align with human dignity and societal values (European Civil Law Rules in Robotics, 2016; European Parliament 2020). Ethical considerations in the design and use of humanoid virtual influencers and robots must account for their impact on human relationships and cultural norms, emphasizing the importance of fostering meaningful, human-centered connections in the face of rapid technological change (Skubis and Kołodziejczyk 2024).

The discussion surrounding humanoid robots in general underscores the profound ethical, cultural, and social dilemmas these technologies evoke. Ethical concerns, such as objectification, privacy, and the potential dehumanization of interpersonal relationships, demand careful examination. Additionally, the rapid advancement of robotics often outpaces societies’ ability to adapt legal and ethical frameworks, necessitating international collaboration to create flexible yet robust regulations. These must protect individual rights and dignity while fostering responsible technological development, ensuring that sex robots contribute positively to society without reinforcing inequalities or harmful norms (Skubis 2024a; Skubis 2024c).

6. Methodology

This research adopts a comparative analysis of virtual influencers, utilizing data from three prominent platforms: Storyclash, Dream Farm Agency, and Influencer Marketing Hub. These platforms specialize in evaluating virtual influencers based on various metrics, such as follower count, content quality, brand partnerships, and audience engagement. Additionally, insights from the Hype Auditor platform are incorporated to validate the findings and provide demographic and reach analytics.

6.1. Data Collection - platforms and metrics

1. Storyclash: As an AI-driven influencer marketing platform, Storyclash provides rankings and insights based on follower count, content engagement, and brand collaborations. Its November 2024 report of “The 10 Coolest Virtual Influencers of 2025” served as the basis for selecting prominent influencers like Lu of Magalu, Lil Miquela, and Shudu.
2. Dream Farm Agency: This platform offers an extensive selection of 50 virtual influencers, expanding the scope of analysis beyond Storyclash’s top 10. The rankings emphasize influence, diversity, and the use of virtual influencers across industries.
3. Influencer Marketing Hub: This source provides a focused list of 12 virtual influencers, highlighting

their unique attributes and industry impacts. Cross-referencing with Storyclash and Dream Farm Agency ensures consistency in identifying key influencers.

6.2. Selection criteria

Influencers were chosen based on their consistent presence across platforms, industry significance, and unique characteristics. Specific focus was placed on Lu of Magalu (e-commerce), Lil Miquela (fashion and music), and Shudu (high fashion). These influencers represent distinct domains, enabling a comprehensive comparative analysis.

6.3. Analytical Approach

1. Platform-based rankings

The study compares the rankings of virtual influencers across Storyclash, Dream Farm Agency, and Influencer Marketing Hub. Differences in ranking methodologies were noted, including emphasis on metrics such as follower count, brand engagement, and demographic reach.

2. Industry focus and social media presence

Data on the industries each influencer represents were analyzed to understand their alignment with audience preferences. The influencers' social media presences across Instagram, TikTok, and Facebook were also evaluated to determine platform-specific strategies and engagement levels.

3. Follower count and growth trends

Follower counts for Instagram and TikTok were tracked over a two-month period (October 7, 2024, to November 26, 2024) to identify growth trajectories and platform-specific appeal. This analysis highlights trends in audience retention and expansion.

4. Qualitative content analysis

Content strategies and collaborations were examined, focusing on their role in brand management, sales, and advertising. Key factors included storytelling, advocacy, and visual appeal, particularly in relation to audience demographics and platform preferences.

6.4. The overview of virtual influencers

Three key platforms - Storyclash, the Dream Farm Agency, and the Influencer Marketing Hub - specialize in analyzing and comparing virtual influencers.

Storyclash, an AI-powered Influencer Marketing Platform, enables brands to boost sales and brand awareness by discovering authentic creators, measuring campaign impact, and managing all relevant data in one centralized location.

In November 2024, Storyclash published a list of "the 10 coolest virtual influencers of 2025", selected based on follower count, content quality, and brand partnerships. This list includes virtual influencers like Lu of Magalu, Lil Miquela, Shudu, Noonoori, Aitana Lopez, Imma, Rozy, Leya Love, Kyra and Milla Sofia. It is evident that only Noonoori is distinctly an AI creation, while the remaining influencers exhibit a more realistic appearance.

The second platform, the Dream Farm Agency, features a much larger selection, with up to 50 virtual influencers. Several characters from the Storyclash list, such as Lu of Magalu, Lil Miquela, and Shudu, appear here as well, but the platform also introduces numerous new influencers, broadening the scope of analysis and representation.

Below the list from the Dream Farm Agency: Lil Miquela, Shudu, Lu do Magalu (but under a slightly different name – on some websites she appears as Lu of Magalu and on some as Lu do Magalu), Imma, Aitana Lopez, Leya Love, Kyraonig (also different name – shorter name used - Kyra on some websites), Rozy, Milla Sofia appeared also on Storyclash, while Janky, Guggimon, Dayzee & Staxx and Ghost Kidz, Casas Bahia, Nobody

Sausage, Bermuda, Kizuna AI, K/DA, B-Beeninfluencer, APOKI, Geico Gecko, Qai Qai, Kaf, Blawko, Code Miko, Al Ailynn, Ayayi, Seraphine, soymar.ia, Ion Gottlich, Any Malu, Puff Puff, Ella Stoller, Luks, Astrolovesu, Zoe Dvir, Anna Cattish, Daisy Yoox, AI Angelica, Koffi Gram, Laila Blue, Clydeo, Maya Gram, Samantha, Alara X, Rae, Lechat, Naida, Wunni appear on the longer list on the Dream Farm Agency.

On the Dream Farm Agency portal, out of the 50 featured virtual influencers, only four are male (Blawko, Ion Gottlich, Luks and Koffi Gram). Moreover, as many as 18 out of 50 characters are not human-looking ones, this group includes Noonoori, Janky, Guggimon, Dayzee & Staxx and Ghost Kidz, Casas Bahia, Nobody Sausage, Kizuna AI, KIDA, B-Beeinfluencer, APOKI, Geico Gecko, Qai Qai, Kaf, Seraphine, Any Malu, Puff Puff, Astrolovesu, Anna Cattish, Clydeo, Lechat.

The Influencer Marketing Hub mentions 12 virtual influencers on their portal. Lu do Magalu, Lil Miquela, Guggimon, Any Malu, Shudu, Janky, Noonoori, B. (previously mentioned B-Beeinfluencer but under a different name among them), are also listed on the previous two platforms. New additions to this list include Barbie, Nikuro, Kami.

Several influencers, such as Lu do Magalu, Lil Miquela, Guggimon, Shudu, Noonoori, and Imma, appear on all three platforms, whereas Any Malu and Janky are exclusive to the Dream Farm Agency.

Interestingly, half of the influencers on the Influencer Marketing Hub resemble real people, including Lu do Magalu, Lil Miquela, Nikuro (notably the only male on this platform), Shudu, Imma, and Kami. The remaining influencers - Barbie, Guggimon, Any Malu, Janky, Noonoori, and B. - are more abstract or non-human in appearance.

Additionally, the website Hype Auditor¹ provides a platform for companies to find influencers to promote their brands. The process is straightforward: users simply enter their interests into the search bar, and the site identifies the most relevant results from a database of over 171.6 million influencers. The platform enables companies to analyze influencers based on audience location, reach, age and gender distribution, authenticity, and other metrics. While a comprehensive analysis requires purchasing detailed reports, a demo version is available to users for initial exploration.



Pic.1. This screenshot was taken from <https://hypeauditor.com/>

6.5. The analysis of the most popular virtual influencers

1. Lu of Magalu

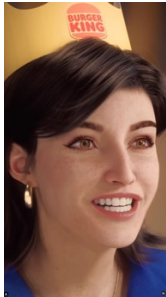
a) Storyclash

On the Storyclash page, Lu of Magalu is ranked first out of 10 in the ranking. Her Instagram account is @magazineluiza, she has 7.1 M followers there and her country of origin is Brazil where she is the most popular. Lu of Magalu was created in 2009 by Brazilian retail brand called Magalu. In order to promote iBlogTV she appeared for the first time on YouTube. She gained the sympathy of her fans by unpacking packages, reviewing products and giving tips on software. As for her 40 brand collaborations on Instagram,

¹ Hypeauditor: <https://hypeauditor.com>

she has earned close to 40M in the past year, which is around €920k in media value.

Among the companies she collaborates with are Samsung, Microsoft, Intel and one-time collaborations with Vogue and L'Oréal. Her most notable posts are related to the Chevrolet car brand and clothing brands. Magalu's followers are mostly female (65,8%), almost 40% of her fans are between 18 and 24 years old, 30% are between 25 and 34 years old and about 70% of them are Portuguese speakers ².

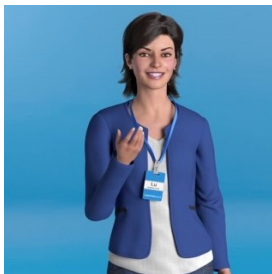


Pic.2. The photo of Lu of Magalu was taken from <https://www.storyclash.com/blog/en/virtual-influencers/> from her Instagram account (@magazineluiza)

b) Dream Farm Agency

On the Dream Farm Agency platform, Lu do Magalu, referred to as Lu do Magalu, is affectionately called “Brazil’s Sweetheart”. She is ranked fourth out of 50 influencers on this site. Serving as an ambassador for Magazine Luiza - one of Brazil’s largest retail companies –

Lu do Magalu focuses on providing valuable shopping tips to enhance her followers’ satisfaction. Her online activities have significantly contributed to the increased popularity of Magazine Luiza, solidifying her status as Brazil’s digital sweetheart. Lu do Magalu’s efforts exemplify the application of modern marketing strategies in the digital landscape.



Pic. 3. The photo of Lu of Magalu was taken from <https://dreamfarmagency.com/blog/top-virtual-influencers/>

c) Influencer Marketing Hub

According to the Influencer Marketing Hub, Lu do Magalu (Lu do Magalu) is ranked first among 12 virtual influencers. She boasts an impressive following, with 7.1 million followers on Instagram, 7.3 million on TikTok, and 14 million on Facebook. Created by Frederico Trajano, the CEO of Magazine Luiza, Lu do Magalu is characterized by her friendliness and relatability. She is the most followed and visible virtual influencer globally.

Beyond Instagram, TikTok, and Facebook, Lu do Magalu also maintains a strong presence on YouTube, with 2.8 million followers, and X (formerly Twitter), where she has 1.3 million fans. Notably, she holds the

²The data comes from the Storyclash page dated November 14, 2024.

highest viewership of any virtual influencer worldwide, though her audience is predominantly based in Brazil. In 2022, she was featured on the Vogue Brazil website. Her collaborations include renowned brands such as Red Bull, MAC, Samsung, and Intel³.



Pic.4. The photo of Lu do Magalu was taken from <https://influencermarketinghub.com/virtual-influencers/> from her Instagram account (@magazineluiza)

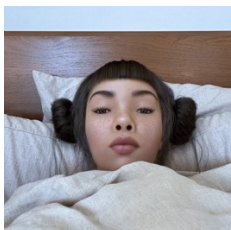
2. Lil Miquela

a) Storyclash

Lil Miquela has 2.6 million followers on Instagram, where her account is @lilmiquela. Originating from the United States, she was created by the American AI company Brud. Lil Miquela, a 19-year-old Brazilian-American, is primarily involved in the fashion industry. Rumours suggest that her annual earnings are approximately \$10 million.

This influencer has been featured in various prominent magazines and media outlets, including Vogue, The Guardian, and BuzzFeed. Notable moments in her career include her appearance in a Calvin Klein campaign, where she kissed Bella Hadid, and her takeover of Prada's Instagram page during Milan Fashion Week. Over the past year, she earned approximately 219,000 euros by reaching an audience of 9.9 million users.

Lil Miquela has collaborated with major brands such as Alexander McQueen, Hugo Boss, BMW, and Red Bull. Her most engaging posts often showcase her on the catwalk, during outfit changes, or doing her nails. The majority of her followers are women (54%), with nearly half (47%) falling in the 18–24 age group and 28% aged 25–34. Most of her audience (55%) resides in the United States, and 62% communicate in English⁴.



Pic.5. The photo of Lil Miquela was taken from <https://www.storyclash.com/blog/en/virtual-influencers/>

b) Dream Farm Agency

Lil Miquela, also known as Miquela Sousa, is ranked first out of 50 virtual influencers on the Dream Farm Agency platform. She is described as "The Trailblazer," a title that highlights her pioneering role in the virtual influencer space. Created by the Los Angeles-based company Brud, Lil Miquela's Instagram account has gained significant popularity. She has collaborated with major brands such as Prada and Calvin Klein and is so realistic in appearance that she could easily be mistaken for a real person.

Her posts cover a wide range of topics, including fashion, music, daily life, social issues, and event attendance. In the fashion and music industries, her achievements include collaborations with renowned

³ The data comes from the Influencer Marketing Hub, dated October 7, 2024.

⁴ The data comes from the Storyclash page dated November 14, 2024

magazines and brands, participation in advertising campaigns, and the release of several music singles. Beyond her professional endeavors, Lil Miquela actively engages in social advocacy, supporting movements such as Black Lives Matter, LGBTQ+ rights, and environmental sustainability⁵.

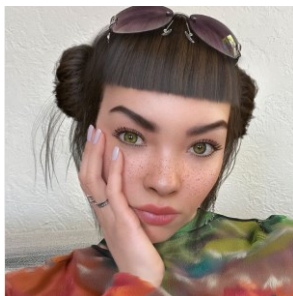


Pic.6. The photo of Lil Miquela was taken from <https://dreamfarmagency.com/blog/top-virtual-influencers/>

c) Influencer Marketing Hub

Miquela Sousa, known as Lil Miquela, on Instagram [@lilmiquela](https://www.instagram.com/lilmiquela), according to the Influencer Marketing Hub, has 2.5 M followers (called “Miquelites”) on Instagram and 3.4 M on TikTok, her unique features include being a virtual robot model and also a singer. What is more, creators of this freckled Brazilian-American influencer are Trevor McFedries and Sara DeCou, the co-founders of Brud. She is ranked second out of 12 people on this page. After her 2017 single “Not Mine” she released several songs. “Hard Feelings” is her first music video which she released in 2020 at the Lollapalooza’s online festival. Despite the fact that she is not a real person, she managed to appear on TIME’s 25 most influential people list of 2018.

Even though she is still prominent, there is not as much interest in her online persona as there used to be, this may be due to the fact that she is a bit less involved in her online life⁶.



Pic.7. The photo of Lil Miquela was taken from <https://influencermarketinghub.com/virtual-influencers/> from her Instagram account ([@lilmiquela](https://www.instagram.com/lilmiquela))

3. Shudu

a) Storyclash

Shudu is ranked third out of 50 virtual influencers on the Storyclash platform. According to this site, she has 239,000 followers on Instagram, where her account is [@shudu.gram](https://www.instagram.com/shudu.gram). Originating from the United States, Shudu is recognized as the world’s first dark-skinned virtual supermodel and influencer. She was created in 2017 by Cameron-James Wilson, a fashion photographer.

Known as the “queen of fashion”, Shudu presents the latest trends and styles using very modern technology.

⁵ The data comes from the Dream Farm Agency, dated March 14, 2024.

⁶ The data comes from the Influencer Marketing Hub page dated October 7, 2024.

This virtual influencer has appeared in Vogue and is recognized throughout the fashion world. Recently, she has collaborated with luxury brands such as Versace and Lanvin and maintains a regular working relationship with Vogue.

Over the past year, Shudu has generated approximately €7,000 in value, reached an audience of 346,100, and partnered with 18 brands on Instagram. Her followers are predominantly women (54%), with nearly half (49%) aged between 18 and 25. Her audience primarily speaks English and is located in the United States, the United Kingdom, Canada, Australia, and Germany⁷.



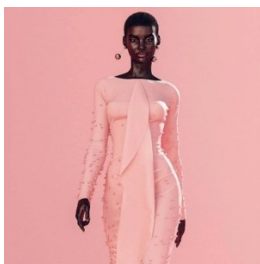
Pic. 8. The photo of Shudu was taken from <https://www.storyclash.com/blog/en/virtual-influencers/>

b) Dream Farm Agency

The Dream Farm Agency platform refers to Shudu as “The World’s First Digital Supermodel”. Similar to the Storyclash platform, the Dream Farm Agency emphasizes that Shudu was created by Cameron-James Wilson, described as a visionary photographer. On this platform, Shudu is ranked second among 50 virtual influencers.

The Dream Farm Agency describes Shudu as a remarkable blend of artistry and advanced technology. As the world’s first digital supermodel, her creation is portrayed as a groundbreaking moment in the fashion industry. The platform highlights her collaborations with prestigious brands such as Balmain and Fenty Beauty by Rihanna. Shudu’s involvement in these campaigns has not only challenged traditional norms within the fashion industry but has also sparked important discussions around diversity, representation, and the future of fashion in a digital context.

Shudu’s creation extends beyond the concept of a digital model, opening new possibilities for the fusion of technology and art. However, the Dream Farm Agency does not provide information on her Instagram account or her earnings⁸.



Pic. 9. The photo of Shudu was taken from <https://dreamfarmagency.com/blog/top-virtual-influencers/>

c) Influencer Marketing Hub

On the Influencer Marketing Hub platform, Shudu is ranked seventh out of 12 virtual influencers. Referred to as Shudu Gram or simply Shudu, she has 239,000 followers on Instagram. The platform emphasizes her

⁷ The data comes from Storyclash platform, dated August 13, 2024.

⁸ The data comes from the Dream Farm Agency page dated March 14, 2024.

unique qualities, describing her as a representative of Black beauty, characterized by fashion and elegance. She was created in 2017 by Cameron-James Wilson, who drew inspiration from iconic models such as Naomi Campbell, Grace Jones, Alex Wek, and the South African Barbie. Beyond Shudu, Wilson has developed other digital characters, including Galaxia, Dangy, Koffi, and J-Yung, under his agency The Biigitals, all of whom share similarities with Shudu.

The digital supermodel’s collaborations include A-list brands, including Balmain, BMW, Elle, Cosmopolitan and Vogue. What is more, Shudu landed on the cover of the Vogue Czechoslovakia Leaders issue in June last year. This supermodel is considered to be a representative of the *groundbreaking chapter*⁹.



Pic. 10. The photo of Shudu was taken from <https://influencermarketinghub.com/virtual-influencers/> from her Instagram account (@shudu.gram)

6.6. A comparison of three virtual influencers – Lu of Magalu, Lil Miquela, Shudu

6.6.1. Virtual influencers and their rankings

Virtual influencers have become increasingly influential in shaping marketing strategies and brand engagement across various industries. Among the most prominent figures in this domain are Lu of Magalu, Lil Miquela, and Shudu, who have garnered significant attention on platforms such as Storyclash, the Dream Farm Agency, and Influencer Marketing Hub. Each platform uses distinct metrics to evaluate the popularity and impact of these digital personalities, including follower counts, content quality, brand collaborations, and audience engagement.

The following table provides a comparative analysis of these three virtual influencers based on their ranking across the mentioned platforms. This evaluation highlights their respective influence within the digital marketing landscape and highlights the growing prominence of virtual influencers in reshaping consumer-brand interactions.

Name of the virtual influencer	Ranking position on the Storyclash platform (out of 10)	Ranking position on the Dream Farm Agency platform (out of 50)	Ranking position on the Influencer Marketing Hub platform (out of 12)
Lu of Magalu	1	4	1
Lil Miquela	2	1	2
Shudu	3	2	7

Tab.1. Virtual influencers and their rankings

According to the results presented in the table above, it seems that Lu of Magalu is the most popular virtual influencer, as she is ranked first on two out of three platforms (the Storyclash and the Influencer Marketing Hub). This dominance reflects her widespread appeal and significant reach across diverse social media

⁹ The data comes from the Influencer Marketing Hub page dated October 7, 2024.

platforms.

Lil Miquela also ranks high, securing the first position out of 50 on the Dream Farm Agency platform, and second on the other two platforms (the Storyclash and the Influencer Marketing Hub). Her consistent performance across platforms highlights her strong brand partnerships and audience engagement, particularly in the fashion and music industries.

Shudu seems to be the least popular of the three, but when compared to the rest on these sites, she ranks quite high, as she is the second out of 50 on the Dream Farm Agency platform, the third out of 10 on the Storyclash platform, and the seventh out of 12 on the Marketing Hub platform. Although her overall ranking is less consistent, Shudu's unique position as the world's first dark-skinned digital supermodel and her collaborations with high-profile brands like Balmain and Fenty Beauty underscore her specialized impact within the fashion industry. Her lower ranking on Influencer Marketing Hub may be attributed to a narrower audience demographic and a relatively smaller following compared to Lu of Magalu and Lil Miquela.

Overall, the rankings illustrate the diverse strengths and areas of influence of these virtual influencers, with Lu of Magalu leading in mainstream popularity, Lil Miquela excelling in versatility across platforms, and Shudu distinguishing herself through representation and niche appeal in the fashion world.

6.6.2. Virtual influencers and their industry's operations

Virtual influencers operate within diverse industries, leveraging their digital personas to engage audiences and drive brand visibility. The following table categorizes Lu of Magalu, Lil Miquela, and Shudu by the primary industries they represent, highlighting the varied niches these influencers occupy. By analyzing their industry affiliations in conjunction with their rankings from the first table, we can infer trends in audience preferences and the relative appeal of different sectors within the virtual influencer landscape.

Name of the virtual influencer	Industry name
Lu of Magalu	e-commerce
Lil Miquela	fashion; music
Shudu	fashion

Tab.2. Virtual influencers and their industry's operations

Analyzing the data from the first table, it becomes evident that the e-commerce sector, represented by Lu of Magalu, emerges as the most impactful industry in terms of broad audience engagement. Lu's strong association with e-commerce aligns with the practical utility of online retail, appealing to a vast demographic range and driving her significant popularity across platforms.

Lil Miquela operates within both fashion and music, industries that are inherently intertwined with cultural trends and personal expression. Her dual engagement enables her to connect with diverse audience segments, blending the aspirational appeal of fashion with the emotional resonance of music. This combination likely enhances her versatility and appeal, explaining her consistent high rankings across platforms, particularly her first-place position on the Dream Farm Agency platform.

Shudu, primarily associated with the fashion industry, has carved a niche as a trailblazer in digital representation. Her status as the world's first dark-skinned digital supermodel has positioned her as a symbol of diversity and inclusion within the fashion world. However, the narrower focus of her industry limits her audience reach compared to Lu and Miquela. Fashion's highly visual and stylistic nature may resonate with a more specific demographic, potentially contributing to her lower ranking on Influencer Marketing Hub despite her strong presence on platforms like Dream Farm Agency.

In summary, the analysis underscores how industry affiliation shapes the popularity and influence of

virtual influencers. Lu do Magalu’s dominance in e-commerce reflects the sector’s universal appeal, while Lil Miquela’s engagement with both music and fashion highlights the advantages of a diversified presence. In contrast, Shudu’s specialization in fashion demonstrates the potential for strong niche appeal but also highlights the limitations of a narrower focus. This comparative evaluation offers valuable insights into the strategic positioning of virtual influencers across different sectors.

6.6.3. Virtual influencers and their presence on social media

Social media platforms serve as critical channels for virtual influencers to interact with their audiences, build their brands, and engage in promotional activities. Platforms such as Instagram, TikTok, and Facebook play distinct roles in shaping an influencer’s reach and engagement, given their unique audience demographics and content formats. The table below compares the presence of Lu do Magalu, Lil Miquela, and Shudu across these three platforms, providing insights into their strategic utilization of social media to maximize visibility and impact.

Name of the virtual influencer	Instagram account	TikTok account	Facebook account
Lu do Magalu	+	+	+
Lil Miquela	+	+	+
Shudu	+	-	+

Tab.3. Virtual influencers and their presence on social media – Instagram, TikTok, Facebook

The data reveals that Lu do Magalu and Lil Miquela maintain active presences across all three major platforms – Instagram, TikTok, and Facebook – demonstrating their comprehensive approach to social media engagement. This omnipresence allows them to connect with diverse audience segments and capitalize on the unique strengths of each platform:

1. Instagram: widely regarded as the premier platform for visual storytelling, Instagram is critical for showcasing curated content, such as lifestyle, product promotions, and collaborations. All three influencers leverage Instagram, a reflection of its centrality in building personal brands and engaging with visually-oriented audiences.
2. TikTok: known for its short-form, dynamic video content, TikTok excels in engaging younger demographics through creative and relatable trends. Both Lu do Magalu and Lil Miquela have established strong presences on TikTok, enabling them to tap into this highly interactive platform. In contrast, Shudu’s absence on TikTok may limit her ability to engage younger audiences who favor this platform.
3. Facebook: despite its decline in popularity among younger users, Facebook remains a significant platform for reaching older demographics and facilitating community-driven engagement. All three influencers are active on Facebook, indicating their recognition of the platform’s enduring relevance for broader audience outreach.

Shudu’s absence from TikTok stands out in this comparison. While her focus on Instagram and Facebook aligns well with her positioning as a digital supermodel targeting fashion-conscious audiences, her lack of presence on TikTok may hinder her ability to connect with younger, trend-driven users who dominate that platform. This could be a strategic decision, reflecting either the limitations of her niche appeal or the challenges of adapting her content style to TikTok’s fast-paced, informal nature.

In contrast, Lu do Magalu’s and Lil Miquela’s all-encompassing social media strategies enable them to reach a broader audience and maximize engagement. Lu do Magalu’s e-commerce focus benefits greatly from TikTok’s viral potential and Instagram’s visual appeal, while Lil Miquela’s dual alignment with music and

fashion positions her to thrive across all platforms.

The presence of virtual influencers across social media platforms reflects their strategic alignment with audience preferences and platform dynamics. Lu do Magalu and Lil Miquela exemplify the advantages of a multi-platform approach, ensuring their visibility across diverse demographics and content formats. In contrast, Shudu’s selective presence underscores the potential trade-offs of a niche-focused strategy, with strengths in fashion-oriented platforms but limited engagement in fast-growing, trend-driven spaces like TikTok.

6.6.4. Virtual influencers and their number of followers

The number of followers is a key metric in evaluating the popularity and influence of virtual influencers. Platforms like Instagram and TikTok offer distinct opportunities for audience engagement, with follower counts reflecting the effectiveness of content strategies and the breadth of appeal. The table below compares the follower numbers and posting activity of Lu of Magalu, Lil Miquela, and Shudu on Instagram and TikTok, highlighting their growth trajectories and relative reach. We verified the profiles of the virtual influencers on both TikTok and Instagram on two separate dates, October 7, 2024, and November 26, 2024, to track changes in their follower counts over time.

Name of the virtual influencer	Number of followers on Instagram as of October 7 th , 2024	Numbers of followers on TikTok as of October 7 th , 2024	Number of posts on Instagram as of November 26 th , 2024	Number of followers on TikTok as of November 26 th , 2024
Lu of Magalu	7.1 M	7.3 M	7.3 M	7.3 M
Lil Miquela	2.5 M	3.4 M	2.5 M	3.4 M
Shudu	239 K	-	238	-

Tab.3. Virtual influencers and their number of followers on social media platforms

As of October 7, 2024, Lu of Magalu leads in follower counts on both Instagram (7.1 million) and TikTok (7.3 million), cementing her position as the most popular virtual influencer among the three. Her dominance can be attributed to her strategic focus on e-commerce, a sector with broad, global appeal. By November 26, 2024, Lu’s Instagram following increased by 0.2 million, reaching 7.3 million, while her TikTok follower count remained steady. This consistent growth underscores her ability to retain and expand her audience through engaging and effective content.

Lil Miquela ranks second, with 2.5 million followers on Instagram and 3.4 million on TikTok as of both dates. Her numbers are significantly lower than Lu of Magalu’s, with her Instagram following being almost three times smaller and her TikTok audience roughly half the size. This disparity reflects the relatively niche appeal of her fashion and music content compared to Lu’s e-commerce focus. However, her consistent follower count across both platforms suggests stability in her audience engagement.

Shudu has the smallest following among the three, with 239,000 Instagram followers as of October 7, 2024, dropping slightly to 238,000 by November 26, 2024. She is absent from TikTok, which limits her ability to tap into the platform’s expansive and predominantly younger audience. Shudu’s focused niche within the fashion industry may account for her smaller audience, as her appeal is directed primarily toward a select demographic interested in high-fashion aesthetics and digital innovation.

Growth and engagement trends:

- Lu of Magalu: the steady growth of Lu’s Instagram following highlights her dynamic and highly appealing e-commerce-focused content. Her large follower base across both Instagram and TikTok reflects her ability to engage a wide demographic range effectively.
- Lil Miquela: while her follower growth appears stagnant over the analyzed period, her consistent

numbers demonstrate a loyal audience base. Her appeal across both Instagram and TikTok showcases her versatility as a virtual influencer operating in the fashion and music sectors.

- Shudu: the slight decrease in Shudu's Instagram following suggests challenges in maintaining audience engagement over time. Her absence from TikTok further limits her reach, potentially reducing her competitiveness compared to influencers with a multi-platform presence.

The follower counts highlight Lu of Magalu's dominance, driven by her strategic alignment with the e-commerce sector and her effective use of both Instagram and TikTok. Lil Miquela's consistent follower base highlights her stable influence in fashion and music, while Shudu's niche focus and lack of presence on TikTok reveal limitations in audience expansion. This analysis emphasizes the importance of multi-platform engagement and sector alignment in determining the success of virtual influencers.

6.6.5. Virtual Influencers in Brand Management, Sales, Advertising, and Beyond

Virtual influencers have emerged as transformative tools in modern marketing, offering brands innovative ways to manage their identity, boost sales, and enhance advertising strategies. Unlike human influencers, virtual personas allow for precise control over branding, messaging, and behavior, ensuring consistent alignment with business objectives. This section examines the roles of Lu of Magalu, Lil Miquela, and Shudu in key areas such as brand management, sales, and advertising, showcasing their unique contributions and broader impact on the industry.

In brand management, virtual influencers excel in maintaining a cohesive and reliable representation of their affiliated brands. Lu of Magalu serves as the digital ambassador for Magazine Luiza, consistently embodying the brand's e-commerce focus. Her relatable and friendly persona ensures a strong connection with consumers, reflecting the company's customer-centric values and fostering trust in its offerings. Similarly, Lil Miquela, with her presence in the fashion and music industries, enhances the cultural relevance of her partnered brands like Prada and Calvin Klein. By engaging with social issues such as Black Lives Matter and LGBTQ+ rights, she strengthens the brands' positioning among socially conscious consumers. Meanwhile, Shudu, as the world's first dark-skinned virtual supermodel, represents diversity and inclusivity, which aligns her with the progressive values of luxury brands like Balmain and Fenty Beauty. Her carefully curated image underscores her collaborators' commitment to innovation and representation.

Sales and consumer engagement represent another domain where virtual influencers thrive. Lu of Magalu, leveraging her extensive presence on Instagram and TikTok, promotes products through interactive and engaging content. By providing personalized shopping tips and product recommendations, she simplifies the decision-making process for consumers, translating her vast follower base into measurable sales for Magazine Luiza. Lil Miquela, on the other hand, appeals to younger, trend-sensitive consumers, using her influence in fashion and music to drive purchases. Her involvement in campaigns like Calvin Klein's iconic advertisements demonstrates her ability to convert attention into action, generating tangible sales outcomes for luxury and lifestyle brands. Shudu, while targeting a smaller audience, excels in engaging a premium demographic. Her collaborations with high-end fashion brands align with the values of exclusivity and sophistication, ensuring a strong connection with consumers who prioritize aesthetic and aspirational qualities in their purchases.

In terms of advertising and content strategy, the adaptability of virtual influencers allows them to excel across various platforms. Lu of Magalu's campaigns emphasize practicality and accessibility, using visually dynamic and interactive content to reach wide demographics. Her TikTok presence, in particular, leverages the platform's viral potential to engage younger audiences, while her Instagram posts effectively showcase Magazine Luiza's diverse product range. Lil Miquela combines emotional storytelling with cultural relevance, making her advertisements memorable and deeply resonant with her followers. Her ability to blend advocacy with brand promotion ensures a deeper emotional connection with consumers. Shudu, focusing on high-fashion aesthetics, prioritizes visually stunning campaigns that highlight the intersection

of art and technology. Her content, tailored for Instagram, aligns with the platform's visual-centric audience preferences, reinforcing her position as a luxury-focused influencer.

Beyond immediate marketing objectives, virtual influencers have a broader impact on industry trends and consumer perceptions. Lu of Magalu sets a benchmark for integrating virtual personas into retail marketing, showcasing the potential for seamless collaboration between digital influencers and sales platforms. Lil Miquela's engagement with cultural movements and social issues exemplifies how virtual influencers can transcend traditional advertising to shape brand identity and build long-term loyalty among socially conscious consumers. Shudu challenges conventional industry norms, promoting technological innovation and inclusivity in fashion. Her partnerships with luxury brands redefine consumer expectations in high-fashion advertising, underscoring the potential of digital influencers to transform the industry.

In conclusion, Lu of Magalu, Lil Miquela, and Shudu highlight the strategic advantages of virtual influencers in brand management, sales, and advertising. By tailoring their engagement strategies to specific platforms and audiences, these digital personas demonstrate the growing importance of technology-driven innovation in achieving business objectives. Their contributions underscore the potential of virtual influencers to reshape marketing practices, offering brands a dynamic and impactful way to connect with consumers in an increasingly digital world.

7. Conclusions

The appearance of human-like and humanoid virtual influencers (HVIs) represents a significant evolution in digital marketing, redefining how brands engage with consumers. This study illustrates the strategic advantages of HVIs, such as their controllability, consistency, and ability to align seamlessly with brand objectives, as demonstrated by prominent figures like Lu of Magalu, Lil Miquela, and Shudu. HVIs have proven effective across diverse industries, leveraging visually compelling content, storytelling, and interactive social media engagement to captivate audiences and drive brand visibility.

However, the findings also underscore critical challenges. The lack of transparency about their creators and motivations raises ethical concerns, particularly regarding authenticity and trust in consumer-brand relationships. While HVIs excel in avoiding risks associated with human influencers, such as scandals or unpredictable behaviors, their inability to replicate genuine human emotion and personal narratives limits their capacity to build deeper connections with some audience segments.

The comparative analysis of HVIs reveals varying levels of impact across industries and platforms, with multi-platform strategies offering the greatest reach and engagement. For instance, Lu of Magalu's dominance in e-commerce highlights the importance of aligning influencer personas with industry-specific demands, while Lil Miquela's versatility across fashion and music showcases the value of diversification. In contrast, Shudu's niche appeal emphasizes the trade-offs of specialized positioning in the highly competitive influencer landscape.

From a practical perspective, brands must weigh the benefits of HVIs' precision and scalability against the potential loss of perceived authenticity. As artificial intelligence and digital rendering technologies continue to advance, marketers must navigate a rapidly shifting landscape that demands innovation while adhering to ethical standards. Regulatory frameworks, such as those proposed by the Federal Trade Commission, will play a crucial role in ensuring transparency and consumer protection in the use of virtual influencers.

In conclusion, HVIs hold immense potential to transform marketing strategies, offering innovative avenues for engagement, brand management, and sales. However, their success depends on balancing technological advantages with ethical considerations, ensuring that consumer trust and authenticity remain central to marketing practices. Future research should further explore the evolving role of HVIs, particularly in areas of agency, consumer perception, and their long-term impact on digital marketing and societal norms.

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