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## Article

# Trends of using social media for the green labelling of modern mobile phones

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# Trends of using social media for the green labelling of modern mobile phones

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## ABSTRACT

This study explores contemporary practices by three major companies, Samsung, Apple and Huawei, to promote the environmentally friendly attributes of mobile phones by utilizing social media platforms. The research employs a combination of literature review and data analysis to investigate the strategies used by these companies in advertising their environmental initiatives on popular social media platforms such as Facebook, Instagram, YouTube and Twitter. The findings underscore the increasing significance of social media in the realm of green labelling initiatives. The study reveals the potential of social media to enhance customer awareness and influence purchasing behaviour in the dynamic mobile phone sector. The article recommends further research in this domain to guide manufacturers in formulating effective strategies amid the evolving landscape of the mobile phone industry.

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## 1. Introduction

Social media platforms and digital marketing are now essential tools businesses use to market their goods and services. Also, social media platforms are progressively focused on gaining a profound understanding of the users, responding to their diverse moods, whims and desires with heightened dedication. Mobile phone companies actively promote their environmentally friendly products through social media and digital marketing, investing in green technology, manufacturing techniques and materials to minimize their carbon footprint and enhance sustainability in response to environmental concerns.

Companies offer environmentally friendly features like biodegradable cases, energy-efficient CPUs and recyclable packaging to attract environmentally conscious customers. Yet, more than producing environmentally friendly products is needed. Mobile phone firms must effectively communicate the benefits of their environmentally friendly goods, utilizing social media and digital marketing channels, which reach 5.07 billion active social media users and over 5.44 billion active Internet users combined, as of April 2024; these platforms represent a substantial opportunity for mobile phone businesses to expand their customer base and improve customer engagement (Bryła et al., 2022).

The study explores contemporary practices by three major companies, Samsung, Apple and Huawei, to promote the environmentally friendly attributes of mobile phones by utilizing social media platforms. This objective guides the research towards examining specific strategies employed by these companies in promoting environmentally friendly mobile phones through social media. By examining the practices of major mobile phones companies this research offers fresh perspectives on how these industry leaders utilize social media for marketing their environmentally friendly initiatives. These insights contribute to

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the existing literature by emphasizing the importance of leveraging social media effectively in marketing efforts within the mobile phone industry, the thorough examination of content, images and sentiment in various advertisements can provide researchers and companies with valuable insights when they aim to promote environmentally friendly products.

Mobile phone manufacturers can use digital marketing and social media to highlight the environmental benefits of their products, promoting sustainability and showcasing their commitment to social responsibility.

In terms of methodology, the research focused on investigating the use of social media platforms (Facebook, Instagram, YouTube and Twitter) to promote mobile phones as environmentally friendly products. This involved a comprehensive literature review to establish a theoretical foundation and identify key concepts and variables. Additionally, observation of social media interactions was conducted to gather empirical data and gain insights into the real-world practices of mobile phone manufacturers in promoting mobile phones as an environmentally friendly product. The analysis of the content, images and customer reviews on the social media platforms was conducted through a multifaceted approach, including comprehensive content analysis and image analysis.

Green marketing is central to the mobile phone industry. It emphasizes environmentally friendly products with features like recyclable packaging and biodegradable cases. This approach includes modifying products, altering the production process, making changes to packaging and adjusting advertising strategies (Delafruz & Armin Goli, 2015). Collaboration with environmental organizations shows a commitment to social responsibility. Mobile phone companies use social media and digital marketing to engage environmentally conscious customers. They promote environmentally friendly devices and support broader sustainability initiatives (Polonsky, 1994).

Promoting environmentally friendly phones is essential. It addresses environmental concerns and reduces the mobile phone industry's carbon footprint. These phones mitigate the negative impacts of manufacturing, usage and disposal, contributing to environmental preservation. Additionally, promoting environmentally friendly phones enhances a company's brand image and market share, making it both an economic and ecological necessity (Shwu-Ing & Yen-Jou, 2014).

This article delves into how mobile phone manufacturers use social media and digital marketing to promote environmentally friendly products. We will explore methods to convince customers of environmental benefits, their impact on purchasing behaviour and challenges businesses face in leveraging social media for environmentally friendly promotion, along with potential solutions.

### **1.1. Overview of green marketing**

Digital marketing uses electronic devices and digital communication channels (mainly the Internet or text messages) to engage with and persuade potential customers to buy goods (Loewenberg, 2015). Digital marketing is now a powerful tool for connecting with consumers, conducting market research and understanding consumer preferences and demographics. Thanks to automation, market research is more effective and costs are lower, benefiting both companies and consumers (Nadaraja et al., 2013). As customers engage with the company through digital channels, it prompts the company to acknowledge the significance of documenting these interactions and evaluating performance, serving as a valuable reference for shaping effective marketing strategies (Febriyantoro, 2020).

The idea of 'green' is regarded as an extreme phenomenon compared to the 1960s attempt to maintain an environmentally conscious lifestyle, which included the concept of green in consumer purchasing habits. This idea has significantly changed today's marketing activities and is used globally (Mukonza et al., 2021). In the early 1970s, the study of environmental conditions' impact on marketing activities began with the primary goal of identifying environmentally conscious consumers, integrating environmental principles into marketing procedures and promoting recycling to encourage industrial societies to adopt environmentally friendly behaviour patterns (Öztürk, 2020).

Green marketing offers numerous benefits, such as enhancing brand recognition and consumer trust, reducing costs through environmentally friendly practices, meeting the growing demand for sustainable products, gaining a competitive edge and promoting sustainable consumption for societal and environmental benefit (Nadioo & Verma, 2019).

Despite initial challenges, the long-term adoption of green marketing in firms yields positive impacts. Global rules and regulations are essential to transform the business landscape and combat pollution. Widespread recycling and energy efficiency should become systematic practices. Organizations' environmental commitments influence suppliers. Consumers and industrial buyers push for integrating ecological considerations into corporate culture to minimize impacts (Chopra, 2015). Green marketing faces several challenges. These include low customer awareness, high R&D costs and meeting environmental standards. Issues like greenwashing and complex supply chains also pose difficulties. To overcome these hurdles, strategies should focus on customer education, innovation, transparency and collaborative value chain efforts (Miriyala & Reddy, 2015).

Future trends in green marketing include consumer preferences for sustainability, environmentally friendly products and transparent green claims. Technology-enabled environmental monitoring, industry collaboration, circular economy concepts and regulatory compliance are also crucial. These trends highlight shifting consumer preferences and the growing importance of environmental stewardship (Babu, 2021).

## **1.2. Digital marketing**

With over 5 billion users globally, mobile phones are essential for businesses selling goods and services. These devices serve as crucial channels for digital marketing, enabling companies to connect with their target market anytime and anywhere.

Digital marketing involves marketing products or services using digital technologies, mainly on the Internet, but also including mobile phones, displays, advertising and other digital mediums (Desai, 2019).

Today, digital marketing is crucial. It uses online platforms to reach consumers, boost brand awareness, enable customized interactions and inform data-driven decisions. A strong online presence is vital for growth, competitiveness and measurable results as consumers increasingly turn to digital media (Singade, 2022). Digital marketing employs diverse tactics to engage online audiences, such as SEO, PPC, social media, email, content and mobile marketing. Platforms like Facebook and Instagram have become formidable rivals to traditional marketing channels, including advertising and direct sales (Jibril et al, 2019). These efforts enhance visibility, target ads, foster connections, provide information and reach users on mobile devices. They aim to boost brand recognition and website traffic, generate leads and drive conversions for company expansion (Saleem & Siddik, 2021). Technology and evolving consumer behavior shape the digital marketing landscape, incorporating new technologies, audio-visual content and social media influencers. Marketers must be flexible, up-to-date and agile to engage their target audience effectively. This dynamic environment offers opportunities and challenges, requiring creativity and data-driven strategies to stay competitive (Wadhan & Kumar, 2023). Many studies have discussed the challenges in digital marketing and sustainability; those challenges were identified in the study of Diez-Martin et al. (2019), as customer orientation and value proposition, digital consumer behaviour, digital green marketing, competitive advantage, supply chain and capabilities.

## **1.3. Methods of digital green marketing**

Investments and usage of digital green marketing are prevalent across many sectors. Argon and Maria (2021) highlight the importance of green investments in tourism, reducing air pollution and emissions without significantly impacting nonenergy products.

Green marketing is vital for Bangladesh's tourism sector growth. The government and businesses collaborate on long-term ecotourism plans, investing in eco-transportation, ecotourism zones and green infrastructure. This promotes ecotourism, organic restaurants and recycling tourism products.

For logistics organizations, green methods and digital marketing strategies for ICTs reduce environmental hazards by lowering emissions and pollution. This leads to market share gains and cost advantages. The report also emphasizes integrating digital systems with green policies (Korucuk et al., 2022).

#### **1.4. Social media and marketing**

Social media marketing is crucial today, with billions using these platforms daily. Businesses engage audiences, advertise and interact in real-time, benefiting from broad reach, affordability and customer loyalty (Odediran, 2020).

Social networking transforms advertising by connecting businesses with a larger audience and engaging customers in real-time.

While achieving zero environmental impact is a lofty goal, environmentally friendly products aim to conserve resources, reduce pollution and minimize waste. Strengthening sustainable consumption habits is crucial for reducing environmental degradation and promoting ethical consumption (Grubor et al., 2017).

Digital green marketing uses social media to reach a broad audience, engage in real-time and target advertising effectively. It promotes environmentally friendly products and builds brand loyalty by sharing educational content. These platforms help organizations communicate their commitment to sustainability (Park et al., 2021).

#### **1.5. Trends and patterns**

Sustainability is crucial in marketing as businesses adopt environmentally friendly strategies due to rising environmental awareness. Digital marketing promotes sustainability and environmentally friendly products, engaging environmentally conscious consumers (Makridou, 2021). Highlighting environmental benefits on digital platforms encourages sustainable choices (Zia, 2012).

With growing competition, brand development is essential. Akor et al. (2022) finds that environmental disclosure, green innovation, green alliances and promotions significantly impact brand development for UK manufacturing firms, while social media marketing has minimal influence.

Mobile phone companies meet the demand for environmentally friendly products by using digital marketing, especially social media, to promote their green products and initiatives (Ali & Ahmad, 2012). Consumers seek green options, so businesses must offer environmentally friendly solutions and share their efforts to enhance brand reputation and attract clients (Zarnikau, 2003).

## **2. Materials and methods**

The methodology was focused on investigating the use of social media platforms (Facebook, Instagram, YouTube and Twitter) to promote mobile phones as environmentally friendly products for three companies (Samsung, Apple, Huawei). The research process involved a comprehensive literature review to establish a theoretical foundation and identify key concepts and variables. In addition, observation of social media interactions was conducted to gather empirical data and gain insights into the real-world practices of mobile manufacturers in promoting mobile phones as a green product.

### **2.1. Sample size and data collection**

The analysis included a sample size of 10 posts and images from each company's social media platforms. Providing a substantial dataset to understand their promotional strategies. Additionally, 50 customer reviews from each company were analyzed to complement the findings from posts and images. This approach ensured a comprehensive understanding of the companies' green marketing efforts on social media.

### **2.2. Analysis methods**

The content, images and customer reviews on the social media platforms of the three companies were analysed through a multifaceted approach:

The analysis was guided by predefined categories derived from a simplified representation of the model employed to analyse the social media presence of the three companies. These categories included:

- Content Strategy: Content Creation and Dissemination (Informative Posts, Testimonials, User-generated content, Sustainability initiatives)
- Engagement and Interaction: Likes, comments, shares, direct messages
- Influencer Partnerships: Social media users' connections, followers, influencers
- User-Generated Content: Product information accessibility, credibility, user reviews (customer posts, reviews, images, videos)

### **2.2.1. Reliability and validity**

To ensure the reliability and validity of the analysis methods, several measures were implemented:

- Inter-Coder Reliability: Although the analysis was conducted by a single researcher, a rigorous process was followed to maintain consistency and objectivity. A detailed coding manual was developed based on the predefined categories, providing clear definitions and examples for each category. This manual guided the coding process and minimized subjective interpretations.
- Pilot Testing: An initial pilot test was conducted on a small sample of posts and images using the predefined categories. This pilot test helped refine the coding process and ensured that the categories were comprehensive and relevant to the study's objectives.
- Documentation: Detailed documentation of the coding process, including the coding manual and pilot test results, was maintained throughout the study. This documentation ensured transparency and replicability of the study's findings.

### **2.3. Analysis technique**

1. A comprehensive content analysis method was employed to assess the textual and visual elements of the posts.
2. An image analysis technique was used to scrutinize the visual content, focusing on design, aesthetics and brand messaging.
3. Customer reviews were analysed through sentiment analysis tools, providing insights into the public's perceptions and feedback on the companies' products and services.

### **2.4. Research design overview**

The process of the research is shown in [Figure 1](#).

## **3. Analysis and discussion**

This section explores and analyses the most popular social media platforms (Facebook, Instagram, YouTube & Twitter). By unravelling the intricacies of this influential platform, we gain valuable insights into its potential for promoting environmentally friendly products and its significance for businesses, individuals and communities.

As of April 2023, the global digital landscape saw significant growth, with 5.18 billion Internet users (64.6% of the world's population) and 4.8 billion people (59.9% of the global population) active on social media. The Internet is now a vital information society, connecting billions globally. Northern Europe leads in Internet usage, while Saudi Arabia and the UAE boast 99% Internet penetration. Conversely, North Korea ranks last globally with minimal Internet usage. Asia led in online users with 2.93 billion, followed by Europe with 750 million. Gender disparities were evident, with women making up 63% of global users, especially pronounced in Arab states and Africa. Ages 15 to 24 showed the highest global Internet penetration, led by Europe at 98%. Income level played a role, with high-income countries reporting 92% Internet usage, contrasting with 26% in low-income markets. Refer to [Figure 2](#) for the data.

Facebook, owned by Meta Platforms, leads globally with 2.9 billion monthly active users. Meta also controls WhatsApp, Facebook Messenger and Instagram, each boasting one billion or more monthly

## 1. Selection of the social media platforms & Companies analysed.

- Platforms: Facebook, Instagram, YouTube and Twitter.
- Mobile phone companies: Apple, Samsung, and Huawei.
- Sample Size: 10 posts and images from each company. 50 customer reviews from each company.

## 2. Types of analysis conducted

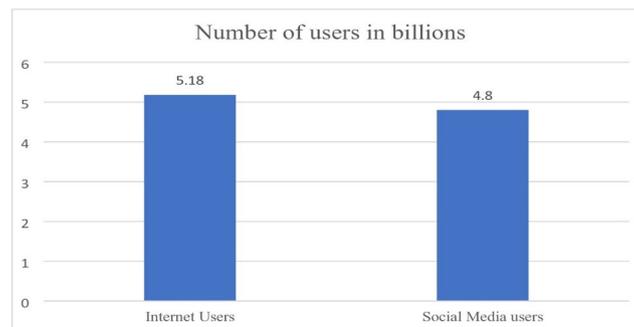
- Content Analysis
- Image Analysis
- Customer Reviews Analysis

## 3. Key Variables

The model for assessing the effectiveness of social media in promoting environmentally friendly products introduces the following entities:

- Content Strategy Content Creation and Dissemination
- Engagement and interaction
- Influencer Partnerships
- User-Generated Content

**Figure 1.** Research design overview.



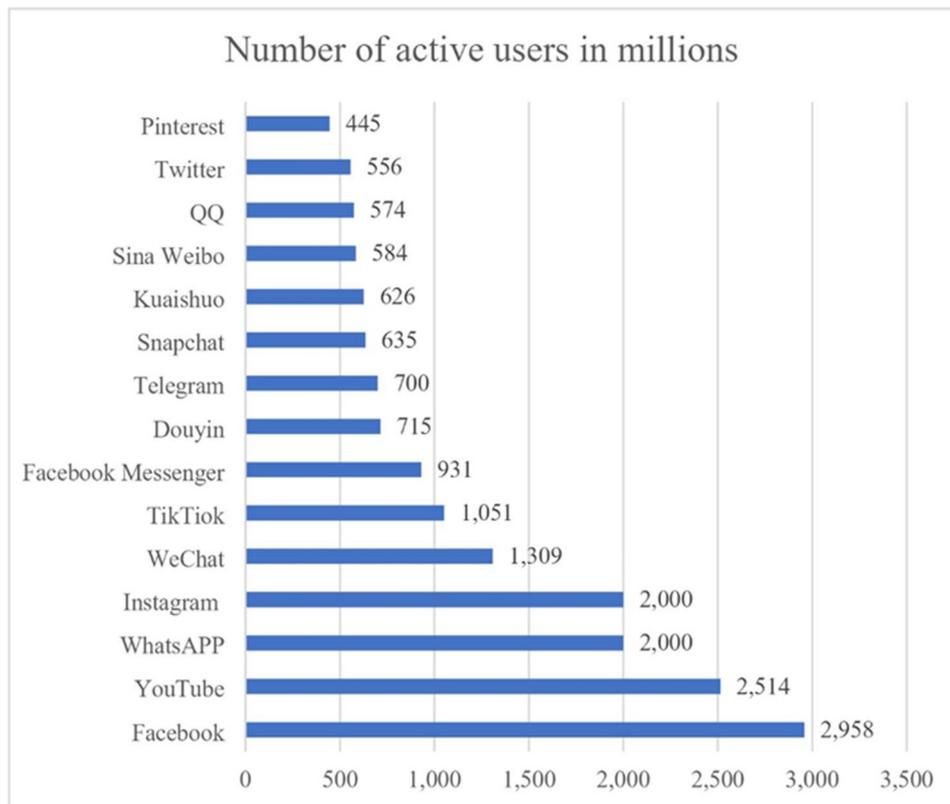
**Figure 2.** Number of Internet and social media users worldwide as of April 2013. (Statista, 2023).

users. In Q4 2022, Facebook reported over 3.7 billion monthly core Family product users. The United States is a hub for many major social networks.

Overall, social networking sites are estimated to reach 3.96 billion users in 2022, with continued growth anticipated as mobile device usage and social networks expand in previously underserved markets. [Figure 3](#) represents the data provided.

### 3.1. Facebook

Facebook is a powerful tool for reaching a large audience and sharing detailed content, including images and descriptions, which helps companies highlight their sustainability efforts.



**Figure 3.** Most popular social networks worldwide as of January 2023, ranked by number of monthly active users. Numbers in millions (Statista, 2023).

### 3.1.1. Galaxy Z Flip 5 Post

Samsung promoted the Galaxy Z Flip 5 with a post highlighting the phone's sustainability features. The post was titled 'Designed with the Planet in Mind' and included an image and a detailed description of the phone's environmentally friendly attributes, such as the recycled materials percentage. The post, featuring green hues and the mobile phone picture, garnered significant engagement with 5917 likes and 22 comments. This allowed Samsung to reach both current and potential customers, effectively communicating their commitment to sustainability.

### 3.1.2. Galaxy S23 Ultra Post

Samsung also shared a post about the Galaxy S23 Ultra, showcasing its sustainability features and recycled material percentages. This post received high engagement with 10,387 likes and 79 comments. Through detailed imagery and descriptions, Samsung effectively communicated the environmental friendly aspects of their product to their audience, fostering discussions and awareness about sustainability.

### 3.1.3. Recycling campaign

Despite Huawei's efforts to engage users in recycling their old phones through a campaign for the Huawei P7 and P9, the results were less than optimal. The campaign, which lacked explicit environmental messaging or green colors, only received modest engagement on Facebook, with 527 likes and 32 comments. This indicates that the campaign may not have effectively resonated with users or motivated them to participate in sustainable practices.

## 3.2. Twitter

Twitter enables companies to quickly share updates and achievements with their followers, fostering real-time engagement and spreading awareness about their environmental initiatives.

### ***3.2.1. Energy star award tweet***

Samsung shared that they were honoured to be the only company to receive two Energy Stars for their commitment to energy efficiency and sustainability. This tweet helped highlight Samsung's leadership in energy-efficient technology, reinforcing their green marketing message.

### ***3.2.2. Energy-saving features***

Huawei promoted their energy-saving features and sustainable technology advancements through tweets and retweets, engaging users with information about their environmental impact.

## ***3.3. Instagram***

Instagram, with its emphasis on visuals, allows companies to showcase their products' environmentally friendly aspects through images and videos, appealing to visually driven audiences.

### ***3.3.1. Recycling post***

Apple's post on recycling highlighted the meticulous process of recycling each part of an iPhone, demonstrating the company's commitment to environmental responsibility. The post featured seven detailed images illustrating the recycling process, accompanied by thorough captions explaining Apple's dedication to a circular economy. Despite its informative content, the post received mixed feedback, with some users expressing skepticism and criticism about Apple's practices. Despite this, the post garnered significant attention on Instagram, accumulating over 254,000 likes and more than 1360 comments.

## ***3.4. YouTube***

YouTube is ideal for creating in-depth video content that can demonstrate a product's environmentally friendly features and the company's sustainability initiatives in a compelling and detailed manner.

### ***3.4.1. Environmentally friendly features videos***

Samsung created video content showcasing the environmentally friendly features of their products. Videos included demonstrations of energy-saving technologies and sustainable packaging, reaching a broad audience and providing detailed information in an engaging format.

### ***3.4.2. Recycling programs videos***

Apple produced captivating videos showcasing their recycling programs and renewable energy initiatives. These videos meticulously detailed the lifecycle of their products and outlined the steps Apple takes to minimize environmental impact. Through these informative and persuasive narratives, Apple highlighted their commitment to sustainability. One such video garnered significant attention on YouTube, accumulating an impressive 129K likes. This particular video provided in-depth insights into Apple's ambitious goal of achieving 100% renewable and carbon-free devices, emphasizing their dedication to environmental responsibility.

### ***3.4.3. Sustainability promotion videos***

Huawei released captivating videos that aimed to promote the sustainability aspects of their latest devices. These videos were centered around highlighting the energy efficiency and recyclable materials used in Huawei products, appealing to environmentally conscious consumers. However, despite their efforts, one of these videos, which featured soothing piano background music alongside images of the environment and people, received only minimal traction on YouTube, garnering a mere 30 likes and very few comments.

Facebook, YouTube and Instagram, being the most widely used social media platforms, are crucial for this study. They offer valuable insights into the role of social media in promoting environmentally friendly products due to their large user bases and versatile functionalities, making them practical for exploring the impact of social media on sustainable consumption and environmental awareness.

### 3.5. An overview of the situation of the three companies

This section briefly overviews tech giants Apple, Samsung and Huawei, examining their global shipment market share, brand value and marketing strategies to assess their impact and strength. It also explores their market performance, highlighting recent developments and critical metrics and providing a comprehensive snapshot of their current standing in the dynamic world of technology and consumer electronics.

In Q1 2023, Samsung Electronics, a major South Korean tech company, reported sales exceeding 63.75 trillion South Korean won (about 48.8 billion dollars). With contributions from mobile communications and semiconductors, Samsung, known for diverse products and electronic components, is poised to benefit from growing consumer spending in the global electronics sector. As a conglomerate with diverse business activities, Samsung substantially contributes to South Korea's GDP, holding one of the world's highest market values.

In Q2 of Apple's fiscal year 2023, iPhone sales surpassed \$51.33 billion, contributing over 54% to Apple's total income. With over 1.5 billion units sold since 2007, the iPhone holds a 20.5% market share for new smartphones as of Q1 2023. Unit sales rose from 55.8 million in 2010 to a peak of over 90 million units in 2022.

As of January 2023, Huawei holds a 6.3% market share, while Apple dominates with over 47%. Huawei nearly tripled its market share from 2018 to 2019, reaching around 11%. After surpassing Apple in Q2 2018, Huawei's market share surged from 3.3% in early 2012 to over 18% by Q3 2019, shipping 66 million smartphones. In 2020, approximately 891 billion yuan of Huawei's income came from telecommunications services and equipment.

As of Q1 2023, Samsung leads the global smartphone market, while Huawei has dropped out of the top five due to competition and the U.S. trade ban. Despite a COVID-19-related dip, Samsung's Galaxy series rebounded, with nearly 258 million units shipped in 2022. Apple, another major player, shipped over 225 million iPhones in 2022, peaking in Q4. Huawei's recent position has declined.

Figure 4 data indicates that Samsung consistently maintains a substantial market share in the global smartphone market, fluctuating slightly from 18% to 23% from Q2 2021 to Q1 2023. Apple, also a significant player, experiences more variability in market share, ranging from 14% to 23% during these quarters. Apple's market shares notably expanded to 22% in Q4 2021, potentially due to new product launches. While Apple usually trails Samsung, it holds a significant market share in comparison to the previous companies, we realize that.

➤ Samsung consistently holds the highest market share among the five companies, ranging from 18% to 23%.

Overall, Apple and Xiaomi are fierce rivals of Samsung, which holds a commanding lead in the worldwide smartphone market. Despite having lesser market shares, OPPO and Vivo are still essential players.

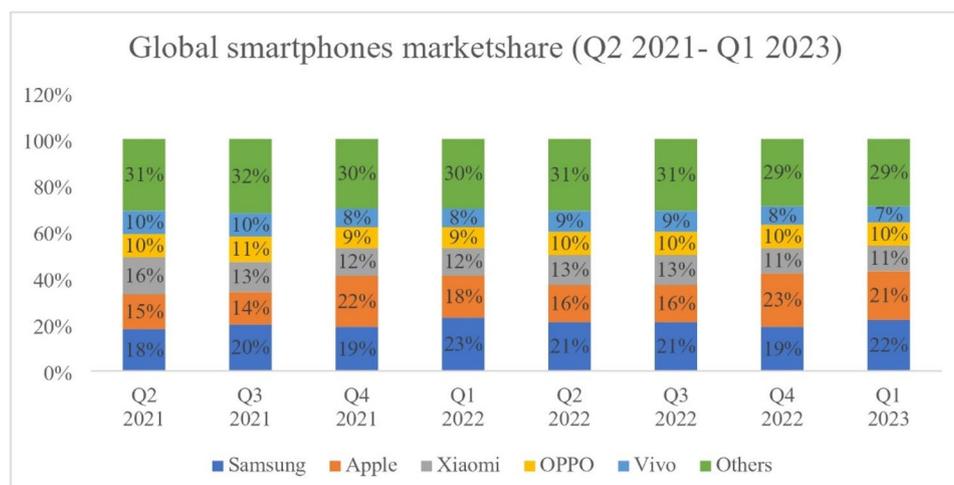


Figure 4. Global smartphone market share (2021–2023).

Remembering that various elements, such as product launches, industry trends and regional preferences, can impact market share is crucial.

### **3.6. Defining competitors in the mobile phone industry**

The following part delves into the analysis of brand value, a critical aspect of assessing the strength and impact of a brand in the market. By evaluating factors such as product quality, consumer perception, marketing strategy and market performance, valuable insights can be gained into the effectiveness and value of those brands.

#### **3.6.1. Samsung**

Samsung Electronics has evolved into a multinational conglomerate renowned for its leadership in consumer electronics, semiconductors, telecommunications and digital media technologies. With over 287,000 employees across 74 countries, Samsung Electronics earned approximately 244 billion U.S. dollars in 2021. Its mobile communication and semiconductor segments significantly drove the company's financial success.

- **Product quality:** With their cutting-edge features, svelte designs, stunning displays, potent CPUs and sophisticated camera systems, Samsung's acclaimed premium smartphones routinely outperform user expectations (Mavlynov et al., 2020). Samsung's flagship smartphone, the Galaxy S21, is a prime example of the brand's dedication to excellence because it continually outperforms customer expectations and builds a reputation for dependability and endurance (Kien et al., 2023).
- **Customer perception:** The high levels of satisfaction with the Galaxy Note series show that customers believe Samsung to be a dependable and trustworthy option (Babu, 2021). Each Galaxy Note model's combination of luxury goods, user-friendly user interfaces and avant-garde design aspects enhance Samsung's standing as a reputable and esteemed brand (Varghese, 2021).
- **Marketing strategy:** To promote its products and draw customers, Samsung uses various efficient marketing techniques, such as ongoing advertising campaigns, strategic alliances and event sponsorships (Price & Erick, 2015). The partnership with a well-known celebrity for the introduction of their flagship smartphone serves as an illustration of their effective marketing strategy (Obhari, 2015). Their massive marketing campaigns use this collaboration as a potent instrument to captivate a large audience and create excitement about their goods. Additionally, Samsung intentionally participates in significant technology conferences and supports well-known events to increase brand recognition (Ishagai et al., 2021). Through these measures, Samsung successfully draws attention to the distinctive benefits and characteristics of its goods, thereby luring and keeping customers (Huang, 2022).
- **Market performance:** Samsung's sustained leadership in the global smartphone market demonstrates its ongoing success and presence, evident through significant market share and consistent sales growth. Despite fierce competition, Samsung routinely ranks among the top players, demonstrating its capacity to satisfy client needs and build a solid foothold in the industry (Dan, 2023).

#### **3.6.2. Apple**

Apple claimed a 20.5% market share in the first quarter of 2023, a decrease from the previous quarter; the company has been among the top five smartphone vendors worldwide since 2009. With the decline of former market leaders Nokia and RIM, Apple and Samsung were able to grow their presence in the market

- Apple is well known for its high-end devices, which focus on precision engineering, appealing aesthetics and seamless hardware and software interaction (Sikka & Kumar, 2022). The business is a mobile phone sector leader known for its commitment to exceptional user experiences. Apple's flagship, the iPhone, exemplifies the company's dedication to high-quality products through meticulous

- attention to detail, simple aesthetics and seamless hardware and software integration (Mythily, 2022). Apple has established itself as a standard for excellence and innovation in the mobile phone business thanks to its consistent dedication to providing a superior user experience (Bilos et al., 2022).
- Customer perception: Apple has built a loyal following of customers who consider its goods to be high-end, cutting-edge and dependable; this brand loyalty and favorable customer sentiment are the results of Apple's ability to forge a deep emotional connection with its audience (Sharma & Verma, 2018). Apple's success is evident in the strong emotional relationship with customers, seen in the excitement and anticipation for each new iPhone release. Recognized as symbols of status, style and innovation, Apple products have practical value and foster active product searches, reinforcing Apple's market leadership (Mary & Sathiyaprashka, 2022).
  - Marketing strategy: Apple's marketing highlights exclusivity, elegance and simplicity, emphasizing product features and user experience and fostering aspiration (Lan, 2021). 3 Apple's 'Shot on iPhone' campaign, which emphasizes simplicity, beauty and exclusivity, serves as an example of its marketing strategy; the campaign highlights breath-taking images and movies taken by iPhone users, highlighting both the outstanding user experience and the potent photographic capabilities of Apple's products. Apple fosters a sense of desire and desirability among customers by showcasing actual examples of the product's features and potential (Chen & Liu, 2021).
  - Market performance: Apple consistently excels in the smartphone market with a substantial share, high prices and impressive sales, demonstrating exceptional market performance. Apple's steady sales success and excellent revenue creation in the smartphone market illustrate the company's outstanding market performance (Caminade & Borck, 2023). New iPhone releases break sales records, emphasizing strong demand. Despite premium prices, Apple maintains a sizable market share, showcasing its ability to capture customer loyalty; this consistent market performance demonstrates Apple's strong positioning as a critical participant in the smartphone market and reinforces its track record for producing in-demand goods (De Vliert, 2021).

### 3.6.3. Huawei

Huawei's market share reached up to 20% in previous years. However, strong performances from rivals and the effects of the U.S. trade ban have since seen Huawei fall outside the top five vendors by smartphone shipments.

- Product quality: Huawei's smartphones are renowned for exceptional photography, strong performance and technological innovations, earning praise for remarkable camera capabilities (Chacon & Rajawat, 2019). The Huawei P40 Pro's cutting-edge camera system offers industry-leading zoom and low-light performance. Huawei smartphones also feature potent processors and ample RAM for smooth multitasking and gaming. Huawei successfully responds to the tastes of tech-savvy consumers who appreciate sophisticated features and cutting-edge technology in their smartphones by continually releasing feature-rich handsets (Hedge et al., 2019).
- Customer perception: Customers' opinions of Huawei vary depending on the market; positive reviews of the brand's value proposition and product quality have been received in several areas. Geopolitical concerns, however, have also presented difficulties, affecting consumer perception in some markets (Uyar, 2018). The brand is praised for its high-quality products and appealing value proposition in regions like Asia and Europe. The Huawei Mate series, known for its advanced features and affordable pricing, receives positive reviews, especially from customers seeking high-performance smartphones (Zhou, 2016).
- Marketing strategy: Huawei uses various marketing techniques, such as sponsorships, strategic alliances and product launches. The brand highlights its technological expertise and distinctive attributes to stand out in a crowded market. The opinions of Huawei's customers vary according to the market (Raushan, 2019). The brand has a strong reputation for quality and value, particularly in China. The Huawei Mate series, known for cutting-edge features and affordability, has garnered favorable reviews in the domestic market (Jiang, 2016). Geopolitical issues have damaged Huawei's

reputation and customer trust in specific overseas markets, with government restrictions and data security concerns being key factors. Nevertheless, Huawei keeps evolving and addressing these issues to preserve and enhance its reputation among customers everywhere (Dmitrijevs, 2020).

- Market performance: Huawei has recently increased its market share and sales volume, ranking among the top smartphone producers internationally. Trade limitations, which limit the brand's access to some markets and technologies, have, nonetheless, influenced the brand's performance in the market (Masahito, 2020). Huawei has significantly increased its market share and sales volume in recent years, solidifying its position as one of the top smartphone producers globally. As an illustration, Huawei's flagship P series was a huge success, garnering a substantial market share. The brand, however, struggled in the market because of trade limitations imposed on it (Li, 2019).

In conclusion, Samsung maintained its lead in global smartphone shipments during Q1 2023, closely followed by Apple. Despite consistent challenges from Apple, Samsung remains a top global vendor. Huawei, a previous contender, dropped out of the top five due to intense competition and the U.S. trade ban. While Samsung's Galaxy series faced a temporary dip in shipments during the COVID-19 pandemic, it rebounded strongly, shipping nearly 258 million units in 2022. Apple, a significant player in the global smartphone market, sent over 225 million iPhones in 2022, with sales peaking in Q4, as demonstrated in 2021 when they claimed the top spot with around 84 million units shipped globally.

### 3.7. The model

Social media platforms like Facebook, Instagram, YouTube and Twitter are valuable tools for companies like Apple and Samsung to promote environmentally friendly products, engage with audiences and raise awareness about environmental sustainability.

This article introduces a novel model (Figure 5) below for assessing the effectiveness of social media in promoting environmentally friendly products. It identifies vital entities as independent components, offering valuable insights for researchers and practitioners to make informed decisions in social media promotion for environmentally friendly products.

Table 1 below serves as a simplified representation of the model employed to analyse the social media presence of the three companies examined in this research article. It outlines the key factors and metrics in evaluating their performance and engagement on social media platforms. The table offers a concise overview of the model, providing a foundation for understanding the subsequent analysis and findings related to the companies' social media strategies and effectiveness.

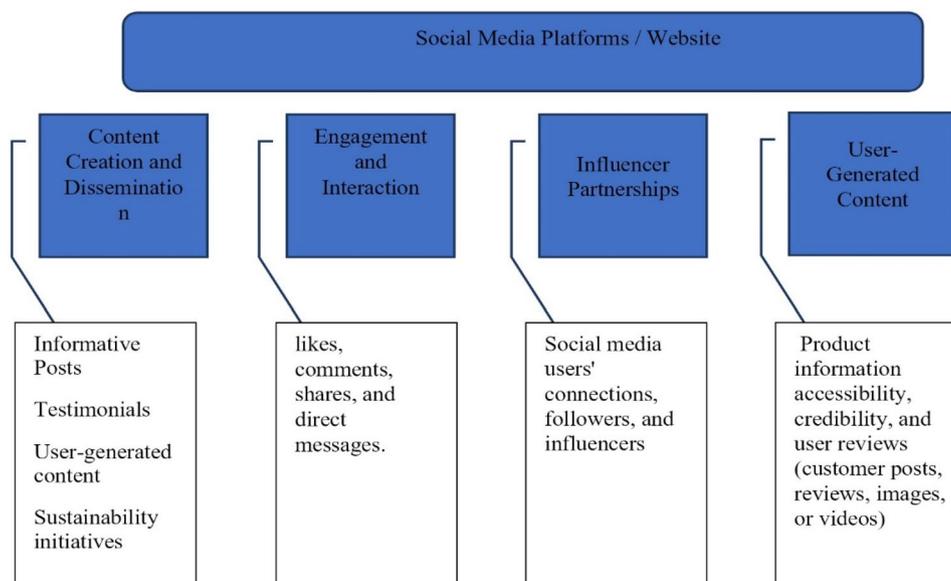


Figure 5. Source: Adapted from Author (Social Media Entities model).

**Table 1.** Overview of analytical model for social media presence.

Company	Content strategy	Engagement and interaction	Roles of social media influencers/ peers	User-generated content
Samsung	Informative posts	Level of interaction	The effect of social media influencers on green products	Product information accessibility, credibility and user reviews (customer posts, reviews, images or videos)
Apple	Testimonials	Nature of discussions		
Huawei	User-generated content Sustainability initiatives			

Source: Adapted from Author: (simplified representation of the used model).

**Table 2.** Detailed analysis of social media strategies for environmentally friendly products.

Company	Content creating strategy			
	Informative posts	Testimonials	User-generated content	Sustainability initiatives
Samsung	Promoting environmental advantages, Samsung's educational content on eco-friendly products	Client Testimonials: Influential Social Proof for Samsung's Eco-Friendly Products	Engaging customers in showcasing Eco-friendly products	Promoting environmental responsibility on social media
Apple	Communicating the benefits of green products	Building trust through customer endorsement	Fostering user engagement and community.	Environmental Stewardship in the Digital age
Huawei	Embracing sustainability via educational content	Testimonials showing praise and trust in Huawei's products	Customer feedback on Huawei's products	Environmental initiatives and commitment

Source: Adapted from Author: (Content-creating strategy).

The following table (Table 2) provides a detailed analysis of the content strategy, user engagement, social influence and information processing related to environmentally friendly products on social media platforms for the companies Samsung, Apple and Huawei. These tables showcase the types of content shared, the level of user engagement, the impact of social influence and factors influencing purchase decisions. The information presented in the tables offers valuable insights into the strategies these companies employ to promote their environmentally friendly products and the response from social media users.

The instances are drawn from the researcher's analysis of content, images and customer reviews on the official social media platforms of the three companies in 2023. Samsung's posts include a Facebook highlight on energy-saving features, a Twitter tweet praising tablet energy efficiency and an Instagram carousel on sustainable packaging with recyclable materials.

Apple highlights energy efficiency in a Facebook post on the latest MacBook Pro's longer battery life. A positive Twitter review applauds the recyclability of old Apple devices. Instagram features #GreenWithApple for community and environmental awareness.

Huawei's social media includes a Facebook post on the energy-saving features of their latest smartphone, a Twitter retweet emphasizing Huawei's contribution to a sustainable lifestyle and an Instagram carousel highlighting environmentally friendly packaging with recycled materials, reducing plastic waste.

Table 3 represents insights on the level of engagement and nature of discussions related to environmentally friendly products on the social media platforms of the companies studied in this research.

Samsung's high-interaction posts feature nature photos taken with their smartphones, emphasizing the tech-environment connection. Users engage with content highlighting the company's commitment to environmentally friendly solutions. Apple focuses on raising awareness through posts about its solar-powered Apple Park, garnering support for its renewable energy commitment. Huawei encourages energy-saving features on their devices, prompting user responses about sustainability and battery optimization.

Influencers on social media are essential for promoting environmentally friendly products and influencing consumer behaviour, especially purchase choices. The fundamental concept of influencers is widely recognized in the social sciences and is broadly acknowledged as a pivotal factor contributing to the success of effective communication (Kolo & Haumer, 2018). This investigation explores how influencers assist Samsung, Apple and Huawei in promoting environmentally friendly products. Apple focuses on recycling and renewable energy, Samsung collaborates with influencers for energy-efficient gadgets and sustainable packaging and Huawei highlights environmentally friendly features through influencers. Overall, influencers engage large audiences, build credibility and create compelling content, enabling these businesses to market their environmentally friendly efforts and products on social media effectively, Table 4 below shows influencers' partnership with each company and their impact on the collaboration.

**Table 3.** Engagement and discussion insights on environmentally friendly product.

	Samsung	Apple	Huawei
Level of engagement	High interaction. Positive support from customers Active discussions.	Strong advocacy of the brand. Raising awareness about the environment.	Emphasis on environmental conservation initiatives.
Nature of discussion	Feedback and suggestions for improvements	Environmental campaigns and calls to action.	Sharing of sustainable reports and information.

Source: Adapted from Author (Level of engagement and nature of discussions).

**Table 4.** Influencer partnerships and their impact on company collaborations.

Company	Influencers partnership		
	Social media platform	Influencer example	Impact collaboration
Samsung	Instagram	@iamwellandgood	Showcasing Samsung's eco-friendly products, highlighting sustainability features and engaging the audience.
Apple	Instagram	@leefromamerica	Promoting Apple's environmental initiatives, sharing experiences with recycling programs and renewable energy efforts.
Huawei	YouTube	@unboxtherapy	Reviewing and promoting Huawei's eco-friendly smartphones, emphasizing sustainable manufacturing practices.

Source: Adapted from Author (Influencers partnership and their celebration impact).

**Table 5.** Analysis of user-generated content and product information.

Company	User-generated content		
	Product information and accessibility	Credibility	User reviews on social media platforms
Samsung	Easy access through official channels and product pages	Reinforced by brand reputation	Valuable insights influencing purchase decisions
Apple	Readily available on social media platforms and the official website	Strong brand reputation	Influential user-generated content and recommendations
Huawei	Accessible through official brand channels and influencers	Reinforced by commitment to sustainability	Engaging user-generated content and reviews

Source: Adapted from Author (user-generated content).

Social media users consider accessibility, credibility and user reviews when buying green items (see Table 5). Crucial for Huawei, Samsung and Apple, they emphasize accessible information, quick access to product details and reliance on official channels and influencers for credibility. These businesses recognize the importance of readily available information, credibility and customer feedback in influencing consumer choices for environmentally friendly products.

Drawing from the literature review and findings, we can relate our observations to existing theoretical frameworks:

### 3.7.1. Theory of planned behavior

This theory suggests that consumer attitudes towards green products are influenced by social media's portrayal of the benefits and ease of adopting sustainable practices. The findings indicate that informative content on social media platforms can shape consumer attitudes towards sustainability, influencing their purchasing decisions.

### 3.7.2. Diffusion of innovation theory

According to this theory, social media plays a pivotal role in accelerating the adoption of green products by targeting early adopters and influencers. The widespread reach and influence of social media platforms enable the rapid dissemination of information about environmentally friendly products, fostering a culture of sustainability among consumers.

### 3.7.3. Informational social influence theory

Social media serves as a powerful tool for shaping consumer behavior by showcasing green initiatives and products, thereby influencing social norms. The findings suggest that consumers are more likely to

adopt sustainable practices when they perceive them as socially desirable, a perception often shaped by the content they encounter on social media platforms.

#### **3.7.4. Technology acceptance model**

The technology acceptance model posits that consumers' acceptance of new technologies or products is influenced by their perceived usefulness and ease of use. In the context of green marketing, social media platforms play a crucial role in shaping consumers' perceptions of the usefulness and convenience of environmentally friendly products. Engaging and informative content on social media platforms can enhance consumers' acceptance of green products by highlighting their benefits and practicality.

## **4. Conclusion**

This article's conclusion underscores the escalating importance of social media in the green labelling of contemporary mobile phones, aligning with theoretical frameworks in green marketing and consumer behaviour. The literature assessment illuminates the industry's mounting emphasis on environmental responsibility and sustainability, resonating with established theories on consumer behaviour and environmental marketing. The insights gleaned from the analysis of data sources provide valuable empirical evidence supporting existing theoretical frameworks. By elucidating the methods employed by mobile phone manufacturers to promote their environmentally friendly features and engage with consumers on social media platforms, this study contributes to the theoretical understanding of digital green marketing strategies. The findings underscore the transformative role of social media as a potent tool for disseminating information about green labelling initiatives, heightening consumer awareness and influencing consumer behaviour. Further research in this domain is imperative for mobile phone manufacturers to leverage social media effectively, guided by theoretical insights, to enhance their marketing endeavours and shape consumer perceptions and choices.

### **Authors' contributions**

Corresponding: Sewar Alkhatib: Played a significant role in shaping the study's conception and design; actively participated in acquiring, analysing and interpreting data; took the lead in drafting the article; contributed critical revisions for important intellectual content; committed to being accountable for all aspects of the work, including data-related responsibilities. Veronika Keller: Provided oversight, guidance and support throughout the article's development; took on the role of reviewing and directing the work to ensure its quality for publication; gave final approval for the version to be published; committed to being accountable for all aspects of the work, actively participating in maintaining its integrity. Petra Kecskés: Provided oversight, guidance and support throughout the article's development; took on the role of reviewing and directing the work to ensure its quality for publication; gave final approval for the version to be published; committed to being accountable for all aspects of the work, actively participating in maintaining its integrity. All authors: Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

### **Professional relationships**

I disclose that I have no professional relationships or affiliations that may pose a conflict of interest with the subject matter or the research project.

### **Intellectual property**

There are no patents, copyrights or other intellectual property rights associated with this research that could give rise to a conflict of interest. I affirm my commitment to the highest standards of integrity, transparency and ethical conduct in the execution of this research. In the event that any potential conflicts arise during the course of the research, I pledge to promptly disclose them to the relevant parties. This disclosure is made in accordance with the

policies and guidelines of Széchenyi István University. If there are any questions or concerns regarding potential conflicts of interest, I am available to provide further clarification.

## Disclosure statement

I, Sewar Alkhatib, hereby declare the following regarding the research manuscript titled 'Trends of using social media for the green labelling of modern mobile phones'. I affirm that: The research was conducted with the highest ethical standards. The funding source (Széchenyi István University) had no involvement in the study's various stages, ensuring the independence and integrity of the research process. No additional external funding or sponsorship was received for this research. I understand the journal's requirement to mention sponsors and their contributions. Should you have any further inquiries regarding the funding or contributions, I am committed to providing the necessary information promptly.

## Data availability

In accordance with the Taylor & Francis Share upon reasonable request policy, the data and materials supporting the outcomes of this study are accessible upon request. Researchers interested in obtaining access to the data may contact Sewar Alkhatib through the provided contact details. We commit to making the data and materials available unless ethical, privacy or security concerns necessitate restrictions. In cases where certain data cannot be shared, a clear explanation for the restriction will be provided to interested researchers.

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