



Social Media Preferences and Usage Behaviour among Indonesians Insights and Implications for Business Strategies

Dewi Yudho Miranti ^{a*}, Rewindinar ^a and Pieter Andrian ^a

^a Institut Media Digital Emtek, Indonesia.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: <https://doi.org/10.9734/sajsse/2024/v21i11898>

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/125283>

Original Research Article

Received: 03/10/2024

Accepted: 15/10/2024

Published: 23/10/2024

ABSTRACT

This study explores social media preferences and behaviors among Indonesian users aged 18 to 64, surveyed between August and September 2024. Utilizing a sample of 156 respondents, the research aims to uncover patterns in platform usage, content preferences, and receptivity to advertisements. The results reveal that Instagram is the most used and preferred social media platform among respondents, positioning it as a crucial channel for businesses targeting the Indonesian market. These findings offer valuable insights into the social media habits of Indonesian users, providing practical implications for businesses looking to optimize their digital marketing strategies.

By identifying key trends in platform popularity, user behavior, and engagement with specific types of content, businesses can better tailor their digital outreach and advertising efforts. The study also

*Corresponding author: Email: dewi.miranti@indosiar.com;

highlights that users are most engaged during particular times of the day and show a strong preference for content related to entertainment, education, and career development. These insights allow businesses to strategically target users with personalized content that aligns with their interests and maximizes engagement. Furthermore, the importance of understanding consumer preferences in shaping effective advertising campaigns is emphasized, particularly in the rapidly evolving digital landscape of Indonesia. This study shows the dominance of Instagram platform among social users.

Keywords: Social media preferences; Indonesia; digital marketing; platform usage; ad receptivity.

1. INTRODUCTION

In the contemporary digital era, social media platforms have become central to human interaction, significantly influencing how individuals communicate, share information, and engage with brands [1]. These platforms have revolutionized the landscape of marketing and consumer behaviour, offering businesses unprecedented opportunities to connect with their target audiences. However, along with these opportunities come challenges; understanding and leveraging social media behavior is critical for companies seeking to establish a meaningful connection with consumers in an increasingly crowded digital marketplace [2,3].

Indonesia represents a particularly dynamic and rapidly growing market for digital platforms. With a diverse population of over 270 million, the country has seen significant shifts in how users engage with social media, fueled by widespread internet access and mobile device usage. According to recent studies, social media penetration in Indonesia is among the highest in Southeast Asia, with platforms like Instagram, TikTok, and Facebook dominating user engagement [4]. This research aims to delve into the social media habits of Indonesian users aged 18 to 64, an age group that encompasses a substantial portion of the population and reflects diverse behaviors and preferences.

By focusing on this demographic, the study seeks to provide valuable insights that will benefit companies looking to enhance their online presence, boost engagement, and refine their marketing efforts. Understanding the nuances of platform usage, content preferences, and advertising receptivity will enable businesses to tailor their strategies effectively and resonate with the Indonesian audience [5,6,7]. As social media continues to evolve, the need for businesses to adapt and innovate in their digital marketing strategies has never been more urgent. This research will contribute to the

existing body of knowledge by exploring these critical aspects of social media engagement, ultimately equipping companies with the tools they need to thrive in the digital age.

1.1 Research Objective

The objective of this study is to analyze the social media preferences, platform usage patterns, content engagement, and advertising receptivity among Indonesians aged 18 to 64 during the period of August to September 2024. By surveying a diverse sample of 156 respondents, the research aims to:

1. Identify the most popular social media platforms and the frequency of their use.
2. Understand the types of content that users prefer, including short videos, stories, posts, and live streams.
3. Investigate user behavior regarding when and why they access social media, focusing on activities like seeking updates from relatives, education, entertainment, and online shopping.
4. Explore user receptivity to advertisements across different platforms and the types of ads that are most likely to engage them.
5. Provide actionable insights for businesses on how to tailor their digital marketing strategies, optimize content delivery, and enhance the effectiveness of social media advertising in Indonesia.

This study aims to offer valuable recommendations for businesses seeking to align their social media strategies with user preferences, maximize audience engagement, and improve marketing outcomes in the Indonesian market.

1.2 Research Methodology

The research methodology was done by survey by sending google form contained 16 questions regarding the respondents' profile, social media

ownership, usage frequency, usage time, usage reason, content preference, and advertisement engagement. The social media platforms included in the questioners was Instagram, Facebook, Youtube, Tiktok, X, and LinkedIn, as these platforms are most highly used around the globe [8]. The google form was distributed during August to September 2024. A total of 156 respondents participated in the study, with the sample demographics as follows:

- **Age Distribution:** 56% of respondents were aged 18-24, 30% aged 25-34, and the remaining 14% were aged over 35.
- **Occupation:** 41% were college students, 33% employees, 20.5% unemployed, with the rest being housewives, freelancers, or business owners.

Respondents' social media platform ownership, frequency of use, and behavior patterns were analyzed using structured questionnaires.

2. SOCIAL MEDIA PLATFORM OWNERSHIP

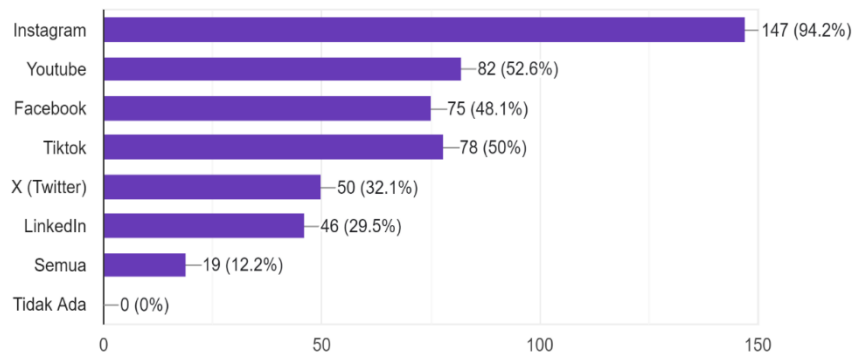
Social media has a near-universal presence among the respondents, with none of the participants being without a social media account. Among the platforms, Instagram dominated the landscape, with an overwhelming 94% of respondents having an account. This clearly reflects Instagram's strong appeal across multiple demographics, especially the younger age group, given its visual and interactive nature.

In terms of other social platforms:

- **YouTube:** YouTube is the second most owned platform, with **52% of respondents** having an account. This suggests a significant interest in video-based content, although it tends to be used for longer-form viewing compared to other social platforms.
- **Facebook:** Facebook remains relevant, with 48% of **respondents** maintaining an account. Despite the platform's reputation for having an older user base, nearly half of the participants are still active users.
- **TikTok:** TikTok closely follows with 50% of respondents holding accounts, underscoring the platform's rapid rise in popularity, particularly among younger users.
- **X (formerly Twitter):** X (formerly Twitter) accounts were held by **32%**, reflecting its importance for news and real-time updates, though it ranks lower in terms of overall ownership compared to other platforms.
- **LinkedIn:** LinkedIn primarily used for professional networking, accounted for **29.5%** of respondents, indicating a more specialized use for career-oriented purposes.

Interestingly, 12.2% of respondents reported having accounts on all these major platforms, indicating a small but significant segment of highly connected individuals who engage with a broad spectrum of social media.

Akun Social Media mana yang Anda miliki saat ini?
156 responses



Q : What social media account do you currently have?
Fig. 1. Social Media Ownership

2.1 Platform Usage Frequency

Among the surveyed platforms, Instagram emerged as the most frequently used, with a notable 92.3% of respondents identifying it as the platform they access most often. This highlights Instagram's role as a primary hub for social interaction, content consumption, and self-expression.

- TikTok follows as the second most frequently accessed platform, with 41.7% of users reporting it as one of their top-used apps. TikTok's appeal is largely due to its engaging, short-form video content, which resonates particularly with younger audiences. Interestingly, this differs from social media ownership trends, where YouTube is the second most widely owned platform. However, in terms of actual usage, TikTok holds the second spot. This could be attributed to the respondents' younger demographic, with 56% of them being between 18-24 years old.
- YouTube is accessed by 33.3% of respondents regularly, though the platform is likely used for longer-form content consumption, such as watching tutorials, educational videos, or entertainment.
- Usage of other platforms such as Facebook, X, and LinkedIn is less frequent, reflecting their more niche purposes, such as professional networking or casual browsing.

When examining overall social media engagement:

- 39.7% of respondents reported opening social media 1-5 times a day, indicating a moderate level of engagement.

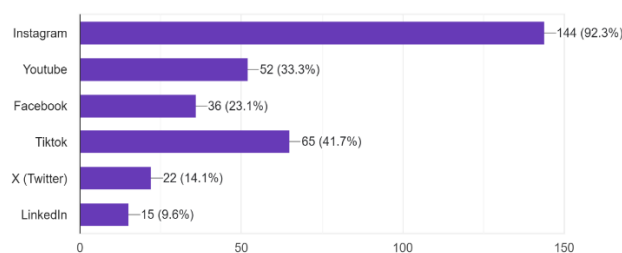
- 34% of users access their accounts more than 10 times a day, highlighting a substantial segment of highly active users who engage frequently.
- 26.3% access social media 5-10 times daily, suggesting a diverse range of engagement levels, with a significant portion being moderate-to-high frequency users.

2.2 When Respondents Use Social Media

Respondents reported accessing social media platforms during various times throughout the day, reflecting how integrated these platforms are into their daily routines:

- 76.3% of respondents reported opening social media during free time, suggesting that these platforms serve as a form of entertainment and relaxation.
- 63.5% access social media during their break time, indicating that many users turn to their social apps for quick escapes or micro-breaks during work or study.
- 46.8% browse social media before sleep at night, showing a strong tendency for bedtime scrolling, which has become a habitual routine for many.
- 34.6% access social media upon waking in the morning, reinforcing the idea that social media is among the first things people engage with to start their day.
- Other times when respondents browse social media include during meal times (28.2%), in the middle of their activities (22.2%), and while commuting or in transportation (21.8%).

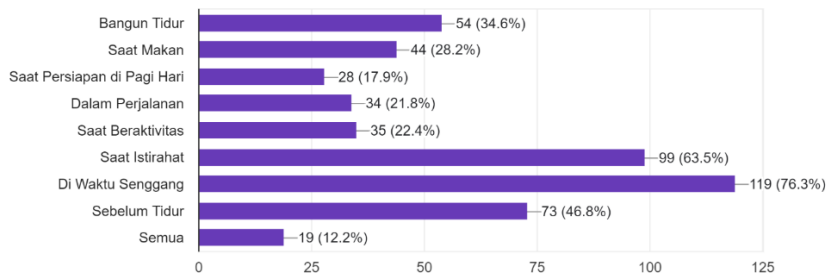
Dari platform Social Media di bawah ini, mana yang sering Anda buka?
156 responses



Q : Which of the following social media you frequently open?
Fig. 2. Platform Usage Frequency

Kapan Anda biasanya membuka Social Media?

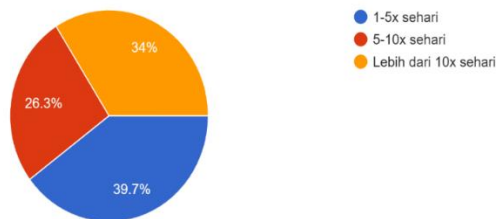
156 responses



Q : When do you usually use social media?
Fig. 3. When Respondence Use Social Media

Seberapa sering Anda membuka Social Media tersebut?

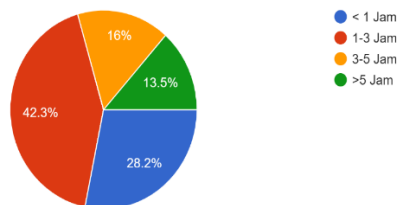
156 responses



Q : How often do you use social media per day?
Fig. 4. Social Media Usage per day (times)

Berapa lama rata-rata waktu yang Anda gunakan setiap membuka Social Media?

156 responses



Q : What is the average hour do you use social media per day?
Fig. 5. Social Media Usage Duration

2.3 Duration & Frequency of Social Media Use

Those who opened social media less than 5 times a day were 39.7%, while 34% open social media more than 10 times a day. The rest with 26.3% open social media 5-10 times a day.

Most respondents open social media between 1-3 hours a day (42%), less than 1 hour (28.2%), 3-5 hours (16%), and the rest can open more than 5 hours a day (13.5%).

2.4 Reasons for Social Media Use

Social media serves multiple purposes for Indonesian users, with respondents citing various motivations for their frequent usage:

- 85.9% of respondents access social media to see updates or news from relatives, emphasizing the importance of social connection and personal interaction.
- 71.8% use social media to seek out educational content, showing that platforms are increasingly being used for self-improvement, learning, and professional development.
- 71.8% also use social media for entertainment, indicating that it remains a major source of leisure activity, with users seeking engaging, fun, and distracting content.
- 45.5% use social media to interact with relatives, further reinforcing its role in maintaining interpersonal connections.
- 30.1% use the platforms to update their own accounts, suggesting that while many users are passive consumers of content, a significant portion also actively participate by sharing their own updates.
- 23.7% use social media for online shopping, illustrating the platforms' evolving role as a marketplace, particularly through features like Instagram Shopping and Facebook Marketplace.

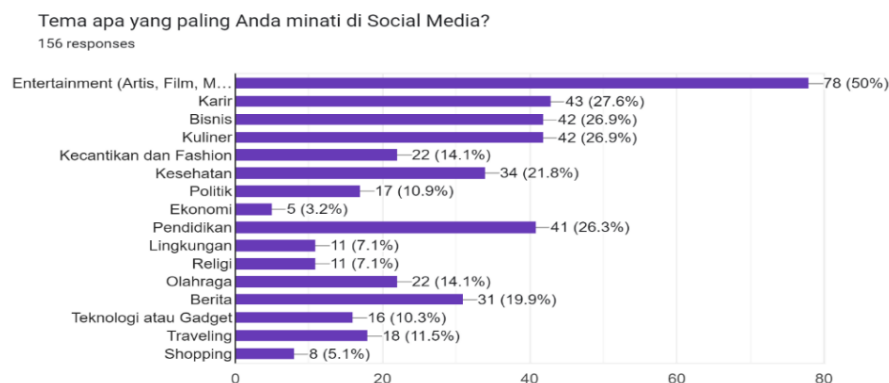
Other areas of interest include:

- Career-related content (27.6%) and business (26.9%), highlighting the growing importance of professional development and entrepreneurship among users. With 33% of respondents being employees and 20.5% unemployed, career-related content emerged as the most preferred among this audience.
- Culinary content is also popular, with 26.9% of respondents engaging in food-related posts, reflecting the Indonesian love for food and the rise of food influencers.
- Education is another high-interest topic for 26.3% of users, further confirming social media's role as a learning tool. This might have happened due to the respondents' profile which was 41% college students.
- Health topics resonate with 21.8% of respondents, indicating rising health consciousness, likely influenced by post-pandemic concerns.
- Other areas of interest include news (19.9%), beauty and fashion (14.1%), traveling (11.5%), and politics (10.9%).

2.5 Content Preferences

When it comes to content preferences, respondents expressed a clear interest in a variety of topics, with entertainment being the most popular category (50%). This underscores the significance of fun, engaging content, such as memes, short videos, and viral trends [9].

In terms of content format, short videos are preferred by 60.9% of respondents, showing that bite-sized, visually engaging content has the most traction among users. Stories are the second most preferred format (19.2%), followed by posts in feeds (14.7%), while a minority of users prefer long videos or live streams.



Q : What topic do you like most in social media?
Fig. 6. Content Preferences

2.6 Advertisement Engagement

Advertisements on social media garnered mixed responses from users. While 34% of respondents said they would not watch ads, a significant portion (41.7%) were undecided and might watch an ad if it was relevant or interesting. 24.4% of users indicated they would watch ads, revealing a small but engaged group of potential consumers for targeted campaigns.

When it comes to the type of ad content users are more likely to engage with:

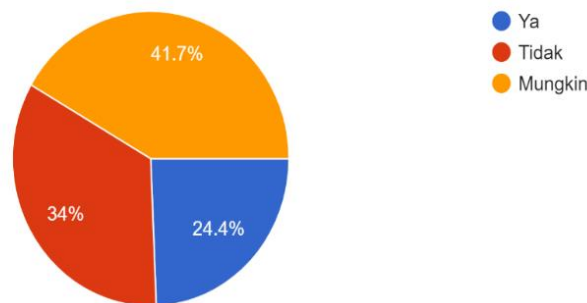
- 41% preferred social ads (ads that are linked to causes, societal issues, or public

service announcements), indicating a strong preference for purpose-driven or meaningful content.

- 21.2% favored commercial ads, which highlights the opportunity for well-crafted, brand-centric campaigns to capture attention.
- The remaining 37.8% preferred other forms of advertising, such as promotional deals or influencer endorsements.
- Instagram is the most preferred platform for viewing ads (50.6%), followed by YouTube (30.1%), and TikTok (12.8%), suggesting these platforms hold the greatest potential for effective ad delivery.

Jika muncul iklan saat Anda sedang melihat Social Media, apakah Anda tertarik untuk menonton?

156 responses

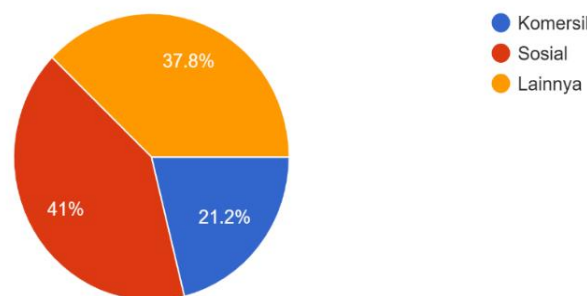


Q : Should an advertisement arise, would you watch it?

Fig. 7. Advertising Engagement

Konten iklan apa yang akan Anda tonton lebih lanjut?

156 responses

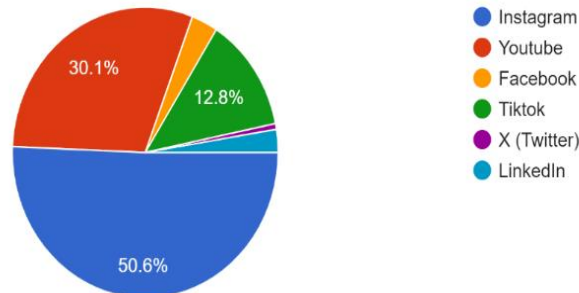


Q : What advertisement content do you usually watch?

Fig. 8. Type of ad content

Di Platform mana Anda lebih tertarik untuk menonton Iklan?

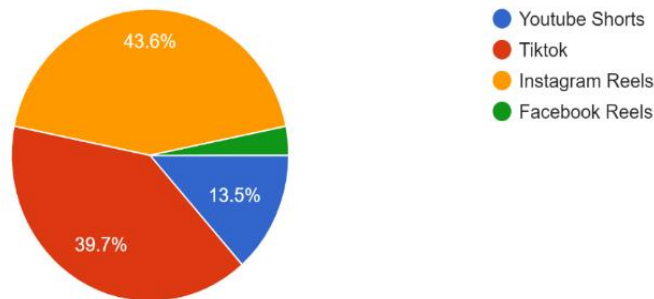
156 responses



**Q : In what social media platform would you prefer to watch?
Fig. 9. Ad Content Platform Preference**

Untuk video pendek, platform mana yang paling sering Anda gunakan?

156 responses



**Q : For short videos, which social media platform would you prefer to watch?
Fig. 10. Short video ad content preference**

2.7 Short Videos

For short videos, 43.6% favoured Instagram Reels, as this platform is the most favored for short videos, suggesting that a significant majority of users find it appealing for its features, content variety, or community engagement. Followed by 39,7% Tiktok, that also shows a strong preference among users for short videos. This indicates that Tiktok remains a significant competitor in the short video space, likely due to its focus on creativity, trends, and viral content [10]. The third rank is Youtube Shorts with 13,5%, this could reflect a growing interest in short-form content on a platform traditionally known for longer videos. However, its lower

preference indicates that it may still be establishing its identity and audience within the short video format.

3. DISCUSSION

The findings suggest that Instagram is the dominant social media platform among Indonesians aged 18-64, particularly among younger users. Businesses targeting this demographic should prioritize Instagram for both organic and paid content strategies. The high engagement on Tiktok and YouTube, especially with short-form videos, highlights the importance of multimedia content in maintaining user attention.

Moreover, the study reveals that educational and entertainment content is highly sought after by Indonesian users, offering a clear opportunity for businesses to align their content marketing strategies with these preferences. Short videos are the preferred content format, making platforms like Instagram Reels and TikTok ideal for delivering concise and engaging messages.

In terms of advertising, businesses should consider focusing on social causes and relatable commercial content, as these resonate most with users. Additionally, while Instagram remains the top platform for ad consumption, YouTube and TikTok also present valuable opportunities for reaching users, especially through creative, engaging video ads.

This study offers actionable insights for businesses aiming to optimize their digital marketing efforts in Indonesia. It highlights key social media platforms and content types that resonate with Indonesian users, particularly younger audiences. By understanding platform usage patterns and content preferences, businesses can tailor their strategies to improve engagement, brand visibility, and customer loyalty in this dynamic market [5,11].

Based on the research findings on social media preferences in Indonesia, several strategies can be recommended for the business world to effectively reach and engage their target audience:

1. Prioritize Instagram as the Primary Marketing Channel

- **Why:** With 94% of respondents owning an Instagram account and 92.3% using it frequently, Instagram is the most dominant platform for this audience.
- **Strategy:** Businesses should focus their marketing efforts on Instagram by creating visually appealing and engaging content such as posts, stories, and short videos (Reels). Instagram's shopping features can also be leveraged to promote products and services directly.
- **Action:** Invest in influencer collaborations, Instagram ads, and user-generated content to increase brand visibility. Use Instagram Reels to deliver bite-sized, engaging content that resonates with users.

2. Utilize TikTok for Viral, Entertaining Content

- **Why:** With 50% of respondents having a TikTok account and 41.7% of them accessing it regularly, TikTok is rapidly becoming a key platform for engagement, especially among younger audiences.
- **Strategy:** TikTok's short, dynamic video format is ideal for viral marketing. Brands should create entertaining, trendy, and authentic content that aligns with TikTok's culture. Challenges, duets, and hashtag campaigns are particularly effective at increasing reach.
- **Action:** Experiment with user-driven content, influencer partnerships, and TikTok ads to engage this highly active audience. Focus on creating fun, shareable content that has the potential to go viral.

3. Capitalize on YouTube for Long-Form Content and Tutorials

- **Why:** YouTube is used by 52% of respondents, with 33.3% accessing it frequently, making it the go-to platform for longer-form content such as tutorials, how-tos, and educational videos.
- **Strategy:** For businesses that provide products or services that require detailed explanations (such as technology, health, or education), YouTube is ideal for creating in-depth, informative content. Use this platform for product demonstrations, how-to guides, and customer testimonials.
- **Action:** Invest in quality video production for educational and entertaining content that keeps users engaged. YouTube ads can be used to target specific audiences with longer attention spans.

4. Leverage Facebook for a Multi-Generational Audience

- **Why:** Although only 48% of respondents have Facebook accounts, this platform remains valuable for reaching older and more diverse user segments.
- **Strategy:** Facebook is still relevant for community building and group interactions. Businesses targeting a wider demographic (including older generations) should utilize Facebook Groups and Pages for

discussions, events, and community-driven engagement.

- **Action:** Create Facebook-specific ads that appeal to users looking for information, product recommendations, and social connections. Use Facebook's sophisticated targeting tools to reach niche audiences.

5. Engage Users with Short Video Content

- **Why:** 60.9% of respondents prefer short videos, making them the most popular content format.
- **Strategy:** Businesses should prioritize creating short, engaging videos across all platforms, especially Instagram Reels, TikTok, and YouTube Shorts. These videos should be concise, entertaining, and deliver the brand message quickly and effectively.
- **Action:** Create a content calendar with a focus on short videos that can be repurposed across multiple platforms. Ensure that these videos are optimized for mobile viewing and reflect the interests of your audience, such as entertainment, education, and business.

6. Use Influencer Marketing for Increased Reach and Credibility

- **Why:** Social media influencers are key in shaping opinions, especially on platforms like Instagram, TikTok, and YouTube.
- **Strategy:** Partner with influencers who resonate with your target demographic to build trust and reach new audiences. Micro-influencers (with smaller, more engaged audiences) can be particularly effective for niche markets.
- **Action:** Develop long-term partnerships with influencers who align with your brand values and who can authentically promote your products or services to their followers.

7. Optimize Content for Different Times of Day

- **Why:** Users access social media during specific times of the day—76.3% during free time, 63.5% during breaks, and 46.8% before bed.
- **Strategy:** Schedule posts and advertisements to align with the times when users are most active, such as

during lunch breaks, after work, or late at night.

- **Action:** Use analytics tools to identify peak engagement times and optimize posting schedules accordingly. Consider using push notifications, stories, or ads that target users during their most active hours.

8. Promote Educational and Entertaining Content

- **Why:** The two most common reasons respondents access social media are to stay updated with relatives (85.9%), followed by education (71.8%) and entertainment (71.8%).
- **Strategy:** To engage users, businesses should create a mix of educational and entertaining content. For example, companies in the finance, health, or tech sectors can post informative content, while lifestyle brands can focus on entertaining, fun content.
- **Action:** Develop campaigns that mix educational material with entertaining content to create well-rounded engagement. Offer free resources, tips, or tutorials that align with user interests in career development, health, and business.

9. Consider Advertising Strategies on Instagram and YouTube

- **Why:** When asked about where they prefer to see ads, 50.6% of respondents chose Instagram, and 30.1% chose YouTube.
- **Strategy:** Focus advertising efforts on these two platforms, especially with visually compelling, short-form ads on Instagram and more detailed, narrative-driven ads on YouTube.
- **Action:** Use Instagram Stories and Reels ads for quick, impactful messages, while YouTube should be used for more in-depth product showcases or tutorials. Ensure that ads are visually engaging and relevant to users' interests, such as entertainment, education, and lifestyle.

10. Tailor Ad Content to User Preferences

- **Why:** 41% of respondents said they prefer social ads (related to social causes), while 21.2% are open to commercial ads.
- **Strategy:** Create ad campaigns that focus on purpose-driven content, such as sustainability, community impact, or social responsibility, while balancing this with commercial promotions.

- **Action:** Invest in cause-based marketing initiatives and integrate social responsibility into your brand messaging. For commercial ads, ensure they are relevant, engaging, and tied to the interests of your target audience.
- 11. Explore LinkedIn for Career and Business-Oriented Content**
- **Why:** 29.5% of respondents have LinkedIn accounts, and 27.6% are interested in career content.
 - **Strategy:** For businesses offering career development services, B2B products, or business-related content, LinkedIn remains a vital platform for targeting professionals and job seekers.
 - **Action:** Publish thought leadership articles, career advice, and professional development content to engage the LinkedIn community. Consider using LinkedIn ads to promote business services to a career-focused audience.

By adopting these strategies, businesses can effectively tap into the social media habits and preferences of Indonesian users aged 18 to 64, ensuring they reach the right audiences with the right content at the right times.

4. CONCLUSION

This research provides valuable insights for businesses looking to refine their digital marketing strategies in Indonesia. The dominance of Instagram and the growing influence of TikTok and YouTube underscore the need for a multi-platform approach to social media marketing. By catering to the preferences for short-form content and educational or entertaining topics, businesses can enhance engagement and drive more meaningful interactions with their target audience [12].

Furthermore, with significant ad receptivity on social media platforms, businesses can optimize their advertising strategies by focusing on social and commercial ads, particularly on Instagram and YouTube. The findings suggest that businesses that align their content with user preferences and maximize platform-specific strengths will have a competitive advantage in Indonesia's evolving digital landscape.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that generative AI technologies such as Large Language Models,

etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology.

Details of the AI usage are given below:

1. The Author used ChatGPT for editing some text

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Kietzmann, Jan H, Hermkens Kristopher, McCarthy Ian P, Silvestre, Bruno S. Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*. 2011;54(3):241-251.
2. Gunawan S, Widjaja AE. The influence of social media on consumer behavior and brand engagement in Indonesia. *Jurnal Manajemen Indonesia*. 2023;23(1):14-28.
3. Fuchs, Christian. *Social media: A critical introduction*. SAGE Publications; 2014.
4. Ningsih R, Pratiwi A. Exploring the impact of TikTok on consumer purchase intentions: Evidence from Indonesia. *Jurnal Bisnis dan Manajemen*. 2023;24(3):182-195.
5. Smith A, Anderson M. *Social Media Use in 2022: Patterns, Preferences, and Platform Developments*. Pew Research Center; 2022.
6. Gensler Sonja, Völckner Franziska Liu-Thompkins Yuping, Wiertz Caroline. Managing brands in the social media environment. *Journal of Interactive Marketing*. 2013;27(4):242-256.
7. Hanna, Richard, Rohm, Andrew, Crittenden, Victoria L. We're All Connected: The power of the social media ecosystem. *Business Horizons*. 2011;54(3):265-273.
8. Augustine L, Rewindinar R, Marta RF. Social media effect: Building the customers loyalty of hennes & mauritz brand fashion in Indonesia. *International Journal of Social Science and Business*. 2021; 5(2):214-219.
9. Whiting Anita, Williams David. Why people use social media: A uses and gratifications

- approach. qualitative market research: An International Journal. 2013;16(4):362-369.
10. Suryadi S. The role of TikTok in the new era of digital marketing. Journal of Interactive Marketing; 2021.
 11. Berthon, Pierre R, Pitt Leyland F, Plangger Kirk, Shapiro Daniel. Marketing Meets Web 2.0, Social media, and creative consumers: Implications for international marketing strategy. Business Horizons. 2012;55(3):261-271.
 12. Constantinides, Efthymios, Fountain, Stefan J. Web 2.0: Conceptual Foundations and Marketing Issues. Journal of Direct, Data and Digital Marketing Practice. 2008;9(3):231-244.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of the publisher and/or the editor(s). This publisher and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

© Copyright (2024): Author(s). The licensee is the journal publisher. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/125283>