

Social media for energy saving campaigns

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ARTICLE INFO

Article history

Received January 12, 2021

Revised February 4, 2021

Accepted February 20, 2021

Keywords

Social media

Campaign

Energy saving

ABSTRACT

The demand for electrical energy continues to increase in line with technological developments. Electrical energy generally comes from fossil fuels or coal. The higher the electricity demand, the more carbon emissions are produced, which can cause global warming. Currently, many campaigns invite people to save energy. The campaign is carried out using social media. Currently, 170 million active social media users in Indonesia spend 3 hours 14 minutes accessing social media. This phenomenon opens up great opportunities for business people, organizations, institutions, and the government to carry out a campaign or promotional activities, such as energy-saving campaigns by various organizations with social media such as Facebook, Instagram, Twitter, and Youtube. This research aims to observe government and non-government accounts that are campaign energy saving on Facebook, Instagram, Twitter, and Youtube. This research was conducted by collecting data from the followers or subscribers, time the account operates on each social media, post, and other necessary data. Based on social media research, the most effective way to campaign energy saving is Instagram.

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1. Introduction

Energy is a part of life. One of the most frequently used energies in everyday life is electrical energy. In Indonesia, the electricity demand continues to increase because technology is also developing. Based on the evaluation of power generation sources in the first quarter of 2018, Indonesia uses fossil fuels as much as 87.3% to meet national electricity needs. The use of fossil fuels as electricity generators must affect the availability of non-renewable fossil fuels quickly. Fossil fuels also produce carbon emissions which have a role in the greenhouse effect and climate change [1].

The more electricity used, the higher carbon emissions are generated by power plants because electricity in Indonesia is still not produced from environmentally friendly materials. So that the resulting carbon emissions will impact global warming, it has prompted the government, organizations, institutions, and companies to carry out a campaign to invite the public to conserve electrical energy. The electricity saving reform campaign can be said to be an idea, characterized as follows: (1) The benefits people get are reducing the monthly payment for electricity and ensuring a sustainable supply; (2) Save energy by wisely saving people's lives; (3) The electricity saving program is easy to understand; (4) The idea of saving electricity is not difficult to try; and (5) the idea of saving electricity is used and communicated to others [2]. The invitation to save electricity was campaigned by using social media.

The development of technology, information, and communication that continues to increase makes the number of Internet users also getting higher all over the world every year, including Indonesia [3], [4]. According to reports from the British media company, internet users in Indonesia in early 2021 reached 202.6 million people. This number increased by 15.5 percent or 27 million people when

compared to January 2020 [5]. The total population of Indonesia is currently 274.9 million. From this data, the number of active social media users reaches 170 million. In January 2021, social media users in Indonesia are equivalent to 61.8 percent of the total population. Furthermore, in the same report, it was also stated that ordinary Indonesian people spend 3 hours 14 minutes each day on social media, which shows that the Indonesian population has been involved in social media in their daily lives.

Fig. 1 shows that the most widely used social media are YouTube, WhatsApp, Instagram, Facebook, and Twitter [6]. The development of social media impacts the organizational process of communicating [7], included in energy-saving promotional activities.

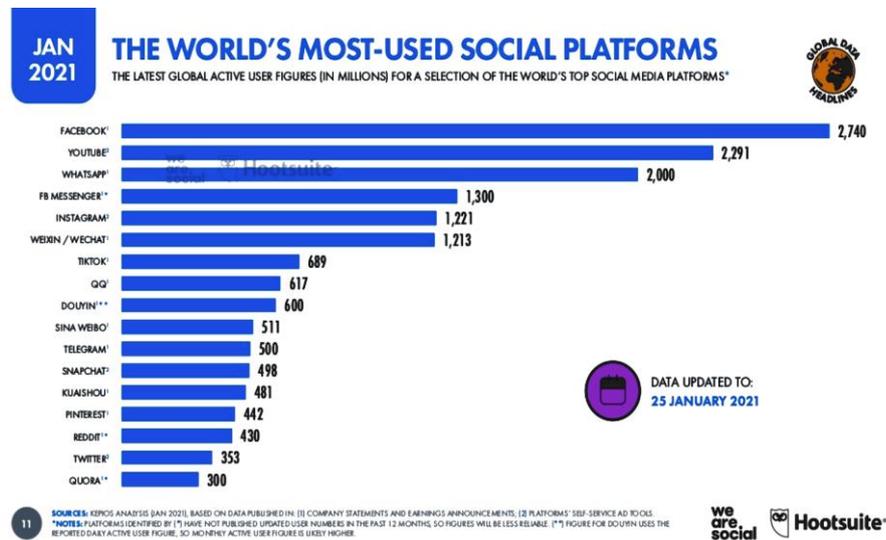


Fig. 1. Popular Social Media [6]

Through the *Kementerian Sumber Daya dan Mineral* (ESDM) and the Institute for Essential Services Reform (IESR), the government is conducting energy-saving campaigns on social media on YouTube, Instagram, Facebook, and Twitter.

However, from the social media used by the government and institutions to carry out energy-saving campaigns, it has not been found which social media is the most effective in campaigning for energy saving. For this reason, a comparative analysis was carried out related to social media, which was more effective in campaigning for energy saving. This analysis was carried out on two social media accounts, first the government account of the *Kementerian Sumber Daya dan Mineral* and the second non-governmental IESR Indonesia.

2. Popular Social Media

Social media is an internet platform provided for communication media, for between individuals, individuals with groups, and groups with groups by sharing content, news, photos, and others as a communication feed so that two-way interactions occur. This understanding is from the conclusion of the meaning of social media. According to communication experts, social media is an internet platform that allows individuals to share quickly and communicate continuously with their community [8]–[10].

Social media has many features and characteristics. It has many facilities on the same channel like communicating, texting, image sharing, audio and video sharing, fast publishing, linking with all over the world, and direct connecting [11]—some of the social media functions.

- Social media is designed to expand human social interaction using the internet and web technology [12].
- Social media successfully transformed the practice of direct communication of broadcast media from one media institution to many audiences ("one to many") into a practice of dialogical communication between many audiences ("many to many") [13].

- Social media supports the democratization of knowledge as well as information. Transforming people from message content users into the message creator itself [14].

The development of social media utilized various fields such as education, economics, health, and others. During the current pandemic, social media has been utilized in the world of education as a long-distance interaction between teachers and students by creating groups on social media such as Facebook, WhatsApp, Instagram, and others [15], as students, they are required to use social media to substitute schools face-to-face until the pandemic ends.

Likewise, with the business world, because of social restrictions to avoid crowds from government regulations, social media is considered very effective for market players to branding or promote their products to switch to e-commerce or online trading places that use gadgets and the internet. It can also help reduce spending [16]. To support the change of the offline market to e-commerce and help reduce the spread of the virus, the bank formalizes digital money as a means of online transactions without using banknotes or coins [17]. Social media helps medical teams such as doctors expand their knowledge and experience by establishing Facebook, Instagram, and Twitter communities, is especially helpful for young doctors [18].

Currently, social media has become a part of people's lives of all ages, especially teenagers and adults. Based on data reported from We Are Social, The highest number of social media users are teenagers 18-24 years with a classification of 14.8% for women and 15.9% for men, while among adults aged 25-34 years, 14.8% for women and 19.3% for men [6].

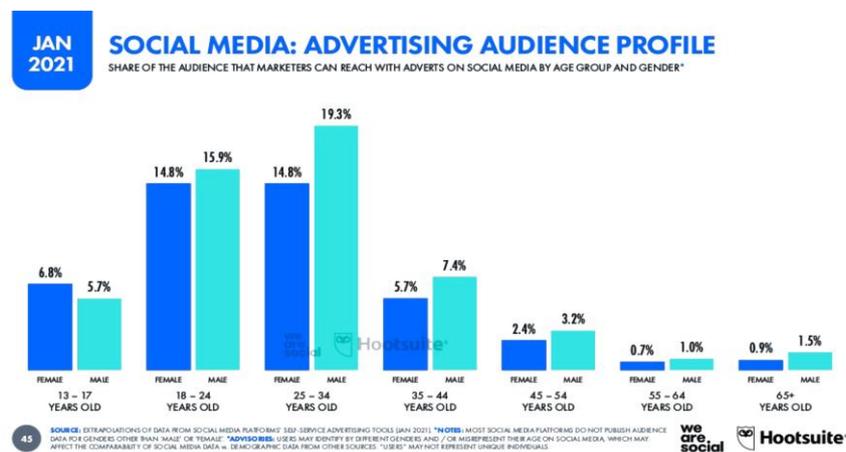


Fig. 2. Audience Profile of Social Media [6]

Fig. 2 shows that social media has reached people of various ages, from 13 years to 65 years and even more. The success of social media in reaching users makes social media a good platform for promotion and expressing positive opinions that can influence the community as social media users.

The first popular social media, Facebook, is a social networking website where users can join communities such as cities, work, schools, and regions to connect and interact with other people [19], [20]. One of the most popular social media because it has a vast number of users and always increases every year, it is recorded that for more than 16 years since the founding of Facebook, there are 3.3 billion registered users globally, while monthly active are 2.7 billion users. Automatically makes it easy to connect everyone in the world to do business promotions [21]. Several things can be done to increase business through Facebook [19], [22]:

- Facebook as a market research media As a communication tool that involves many people. It is easy for business people to experiment with products before sell.
- Facebook for branding, generating traffic, and sales. Business people are facilitated by the wide distribution of information for product promotion that will increase sales.
- Facebook can be used as a money-making media on the internet. Features such as Facebook groups, Facebook pages, Facebook ads, and Facebook marketplace can be used to market and place for paid product advertisements.

The second is Instagram, a photo and video-sharing application that allows users to take photos, take videos, apply digital filters, and do other network activities [23], [24]. This free downloaded application is available for users of IOS devices and android devices. To start using Instagram, users must create account that contains user data and an email address to verify this data, after which Instagram provides information on the use of the features in it before use. Instagram has many features and will increase in the development of the application. The four popular features are detailed as follows.

- Photo and video sharing feature. The feature is prevalent in this application because users can share photos and videos in the gallery or take their pictures and upload using the internet. Before uploading, users can edit photos or videos using Instagram filters and create photos and videos directly with these Instagram filters. Photo or video posts can be given a caption in the text to provide information on the post. In addition, the user can tag other users by tagging the intended user.
- Comments and likes feature. This feature can be an indicator of whether a post is liked or not. The more likes on the post, this indicates that the post is very popular with many people. Instagram does not provide a dislike feature on these posts, but it can be seen from the comments provided by other users
- Explore feature. Users can see popular posts or many other users, especially their followers.
- Instagram story feature. Post photos or videos with a short duration, which is a maximum of 15 seconds. The maximum of uploaded stories within 24 hours is 100 stories or 1,500 seconds per day. Posts for each story will be deleted or cannot be viewed after 24 hours.

Twitter, is also one of Facebook's biggest rivals since 2012, with 150 million active users and 1.3 billion registered accounts in 2020 [25]. The sending of messages known as "tweets" with a limited length of 140 characters identifies Twitter from Facebook. Tweets display as a message stream [26], [27] on the user's page, viewed by the public or followers. Users might follow other users to expand their social network if the public or followers retweet (repost tweets). Twitter also allows users to communicate privately through the direct message function, which enables people to communicate with one another without being seen by the public. Hashtags are always used on Twitter to indicate what is trending at the time. Most of Twitter's features are similar to all of those seen on other social media platforms.

Finally, Youtube is a video-sharing site created in February 2005. This site allows users to upload, watch, and share videos with other users. In general, videos on YouTube users-created video clips from films, TV, and videos, although media companies such as CBS, BBC, Vevo, Hulu, and other organizations have used Youtube as a news delivery partner [14], [28].

Unregistered accounts can only view YouTube videos and have no other access. A subscription feature to follow a channel (an account that has been registered and verified), where users can receive notifications of the latest videos or activities on the channel in a verified email. Non-paying accounts have restricted download access, which depends on whether the channel that uploaded the video provides download access or not, while paid accounts can download without access from the provider's channel and can listen to them offline. Every video that users view for free has ads in the minutes determined by YouTube, while paid accounts are ad-free. Ads will be a source of income for content creators who have a large audience.

3. Method

Observations in this study through social media on government accounts and institutions' energy-saving campaigns are the accounts of *Kementerian* ESDM and IESR Indonesia. This observation on March 17, 2021. The social media accounts of *Kementerian* ESDM and IESR Indonesia studied are Instagram, Youtube, Facebook, and Twitter.

The data collected is the followers or subscribers, how long the account operates, Instagram posts, the average Instagram likes Instagram comments, and other data needed to support the research. After data collection, the next stage is comparative analysis. This comparative analysis by comparing data in the form of the followers with the time the account operates.

4. Results and Discussion

This research analyzes the social media accounts of the *Kementerian* ESDM and IESR Indonesia in campaigning for energy savings in Indonesia on Facebook, Instagram, Twitter, and Youtube. Some social media users analyze which social media is more effective for energy-saving campaigns. The parameters used in this analysis are followers with time.

The *Kementerian* ESDM account on Facebook uploaded content or posts for the first time in February 2013 for 97 months. The Facebook account had 171,623 followers in March 2021. The first post on Instagram was in April 2016, in March 2021, with 425 thousand followers. Twitter posts were first published in February 2013, and March 2021 (97 months) had 260.5 thousand followers. Finally, on Youtube, uploaded a video that started in July 2015, in March 2021 (69 months) has 21,200 subscribers.

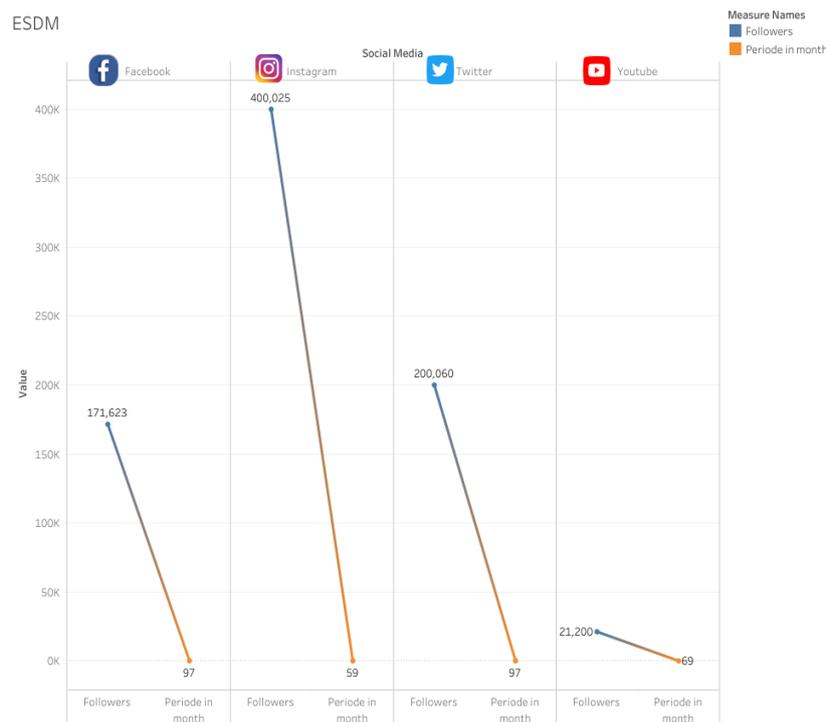


Fig. 3. Followers of the Kementerian ESDM and Time to Join Social Media

The data in Fig. 3 shows that the Kementerian ESDM account on Instagram has the highest followers, in only 59 months, shorter than the Kementerian ESDM accounts on other social media. Moreover, Fig. 3 shows that the Kementerian ESDM account on Instagram can grow faster than Facebook, Twitter, and Youtube accounts.

The development of the Kementerian ESDM account on Instagram is influenced by several things, such as the type of content, posts, and social media users. The followers of the Kementerian ESDM on Instagram come from the younger generation to adults. According to theory, the younger generation (aged 18-24 years) and adults (aged 25-34 years) are the highest social media users.

Then, the content presented on the Kementerian ESDM Instagram account is needed by social media users, which is exciting and informative content. It is content about the information policy by the government in creating renewable energy, publication of events or seminars discussing energy-saving, energy-saving campaigns, and energy innovation quizzes and challenges with prizes, among others. The content has been published in 2,494 posts and has received many responses from Instagram users. The calculations with the Engagement Rate Calculator for Instagram, the Kementerian ESDM posts received an average of 883 likes and 60 comments by Instagram users. This number is high enough for the number of posts which is quite a lot.

Move to the IESR Indonesia account. On Facebook, this account started uploading content in February 2018, and in March 2021, or 37 months, it had 473 followers. Then on Instagram, the first post was in September 2017. In March 2021 (42 months) IESR's followers were 5,344. On Twitter,

the IESR account started tweeting in September 2009. Then in March 2021 (140 months), this account had 2,115 followers. IESR uploaded a video on Youtube, in September 2010, in March 2021 (42 months), with as many as 1,280 subscribers.

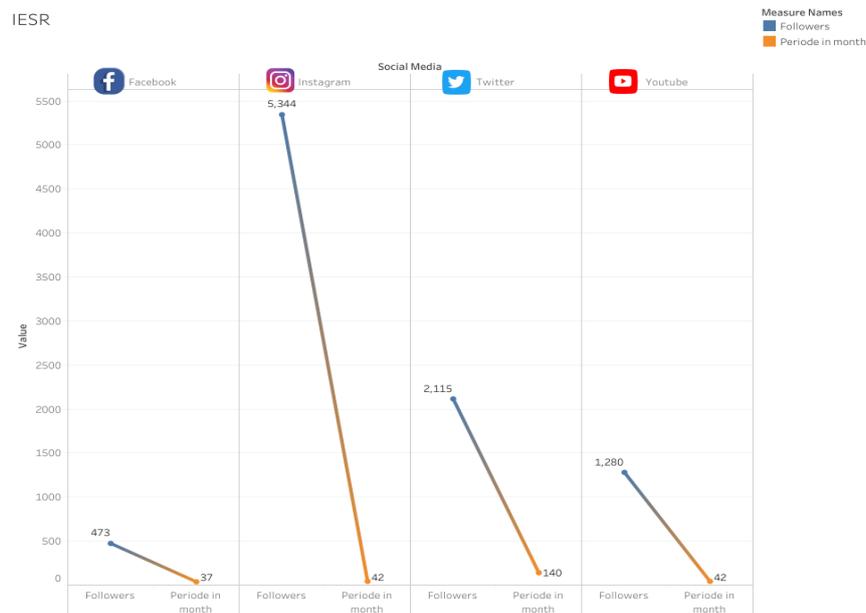


Fig. 4. Followers of IESR Indonesia and Time to Join Social Media

Fig. 4 shows that IESR accounts on Instagram also have the highest number of followers, achieved within 42 months, shorter than IESR accounts on Facebook, Twitter, and Instagram, proves that IESR accounts on Instagram can grow faster compared to accounts on other social media. In other words, Instagram is considered more popular than Facebook, Twitter, and Youtube. Another study also mentioned that Instagram is becoming the most popular social media platform. Around one-third of online adults (32%) report using Instagram—roughly the same share as in 2015, when 27% of online adults did so [29].

Social media users, content, and the number of posts influence the development of this IESR Instagram account, with 551 posts containing exciting and informative content. The latest information related to energy, energy-saving campaigns, challenges, seminar information that discusses energy, and others.

This IESR account also has quite a lot of responses on its Instagram account. Based on calculations made through the Engagement Rate Calculator for Instagram, IESR posts get an average of 110 likes and three comments from Instagram users. This figure is high enough for a 42-month-old institution account.

Instagram is a social media account that gets the highest number of followers. Those followers are obtained in the shortest period. Instagram, as a popular social media, is considered the most effective use for energy-saving campaigns. In addition to the behavior of organizations in conducting energy-efficient campaigns, Instagram's ability to improve user convenience also affects the effectiveness of this campaign through social media. Instagram users are satisfied with Instagram's features for expressing or presenting themselves [30], and users also spend longer on Instagram than on Twitter and Facebook [31].

5. Conclusion

The increasing need for electrical energy makes the resulting high carbon emissions, which impact global warming. Therefore, through the Kementerian ESDM and the non-governmental organization IESR Indonesia, the government is campaigning for energy savings through social media Facebook, Instagram, Twitter, and Youtube. The research results show that the most effective social media for energy-saving campaigns is Instagram. The Kementerian ESDM and IESR Indonesia Instagram account have more followers in a short time compared to other social media platforms. There are

several reasons why Instagram is more effective for energy-saving campaigns; first, most Instagram users are young to adults aged 18-34 years. Another reason is the ease of use and attractive features of Instagram that many users love.

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