

## Indonesian Policy Campaign for Electric Vehicles to Tackle Climate Change: Maximizing Social Media



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### ABSTRACT

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Recent policies have encouraged the Indonesian government to campaign for the use of electric vehicles to prevent climate change problems. That prompted this study to analyse the model of government policy campaigns on social media. This study used a quantitative approach with descriptive content analysis. Data sources come from Twitter search results focusing on official government accounts (@jokowi) and keywords (electric vehicles and climate change). The analysis tool used is Nvivo 12 Plus. This study found that the government's use of social media can educate and influence public response to support government policies on the use of electric vehicles, including climate change issues. Reducing carbon dioxide (CO<sub>2</sub>) emissions, the potential for developing an ecosystem for electric vehicles, encouraging investment, increasing state revenues, promoting public involvement and participation, and offering subsidies are some of the significant issues that the government has been actively promoting on social media. The government raises awareness of this issue to sway public opinion and encourage the adoption of regulations that will facilitate the usage of electric vehicles. It is also possible to contribute to the initiative to raise public awareness of the significance of environmental and sustainability-related concerns in the future.

## 1. INTRODUCTION

Climate change is a global issue of significant importance, now being intensively discussed in many countries [1]. The term 'climate change' describes shifts in the planet's average temperature, rainfall, and humidity. It is attributed to several factors, including greenhouse gas emissions [2], deforestation [3], and other human activities [4].

The impacts of climate change are significant and wide-ranging, affecting ecosystems and living organisms through an increased frequency of natural disasters [5], alterations in habitats, and species extinction [6]. The economic and social implications are broad as well, leading to changes in weather patterns [7], shifts in the agricultural industry [8], and various social and political consequences [9]. Hence, climate change represents a global problem that demands attention.

In response to climate change, various adaptation actions and policies have been introduced by governments worldwide [10]. Different countries have implemented diverse strategies for tackling climate change [11]. Notably, limiting greenhouse gas emissions is a policy widely implemented [12]. Many countries have set emission limitation targets and introduced market mechanisms to help achieve these goals [13].

Another popular strategy is the promotion of renewable energy [14]. Numerous countries are increasing the use of renewable sources like solar, wind, and hydropower, and are encouraging the development of associated technologies [15]. Education and community participation also form crucial parts of these policies [16].

Efforts have also been made at the international level [17], with encouragement for participation in forums like the UN Framework Convention on Climate Change [18]. These platforms facilitate information sharing and coordinated action against climate change. Despite the introduction of various policies, more work is needed to ensure these actions are practical and ambitious enough to slow climate change and safeguard our planet for future generations. This necessitates shared awareness [19].

The awareness of climate change as an issue is both vital and urgent given its significant impact on the environment, economy, and the sustainability of lives globally. This calls for strenuous efforts in many areas, including Indonesia [20].

The Indonesian government is campaigning for a conversion effort that focuses on adapting electric vehicles to prevent climate change. The Indonesian government has also recently attempted action to reduce the adverse effects of climate change by inviting people to consider electric vehicles [21]. Motorized vehicles are one of the largest sources of greenhouse gas emissions [22], so Indonesia and many other countries have also issued policies to increase the use of electric vehicles as an alternative. Several policies implemented to increase the use of electric vehicles are subsidies and incentives [23]. The Indonesian government also offers subsidies and incentives to motivate electric vehicle purchases, such as financial incentives.

There have been many studies on climate change. However, only some studies still specifically explain climate change, online government campaigns, and policy adaptations to the

simultaneous use of electric vehicles. This study accommodates all of these aspects. However, there is some relevance from the results of previous studies, which are considered quite relevant. First, policies regarding electric vehicles are critical to helping tackle climate change and accelerating the transition to a more environmentally friendly transport system [24]. Second, the government's response in campaigning for electric vehicles is critical in dealing with climate change [25]. That is because the government plays a significant role in influencing people's actions. One of the reasons why campaigns are essential on climate change issues is participation [26]. Currently, policy campaigns about change can be carried out online on social media [27].

This study aims to fill in the gaps in previous research by analysing climate change issues and the public's response on social media to the policy of using electric vehicles in Indonesia. This research question is mapped as follows: (a) How does the Indonesian government carry out the online campaign on the issue of climate change and the use of electric vehicles? (b) What are the results of the mapping on the dominant campaign topics carried out by the Indonesian government regarding government policies on adaptation to the use of electric vehicles and climate change? (c) How is the public response on social media? These three questions make it possible to find out how the government's campaign and public response on social media are regarding government policies on climate change issues, especially the Indonesian government's efforts to encourage the use of electric vehicles.

## 2. METHOD

This study used a quantitative approach with descriptive content analysis. Descriptive content analysis is a quantitative method used to describe and analyze the contents of messages in a text by identifying and counting the occurrence and frequency of certain words or phrases. Thus, research that uses a quantitative approach with descriptive content analysis can provide a more measurable and objective understanding of the contents of the messages in the text under study.

The subject of this research is the official government account (@jokowi) and other Twitter social media users. The research object is seen from the involvement of the official government account (@jokowi) in campaigning for policies on using electric vehicles to prevent climate change. Other research objects are also seen from other Twitter users in the policy discourse, especially the public's response to the policy of using electric vehicles.

Data was obtained from social media such as Twitter, with Twitter search focusing on searching for the government's official account (@jokowi) and keywords; Electric vehicles (1126 Tweets captured) and climate change (771 Tweets captured). The total Tweet captured is 1897, modified on 14-02-2023. The data collection uses Ncapture on Google Chrome. The collected data is transferred into the analysis tool. The analysis tool used is Nvivo 12 Plus through a data coding process. NVivo 12 Plus is a computer software used to perform data analysis.

The units of analysis used are identifying themes, case and classification, and sentiment analysis. Identifying themes helps researchers identify the information contained in the posts and conversations of Twitter users. Cases and attribute classifications are used to categorize data on Twitter. Sentiment analysis is used to identify public opinion regarding

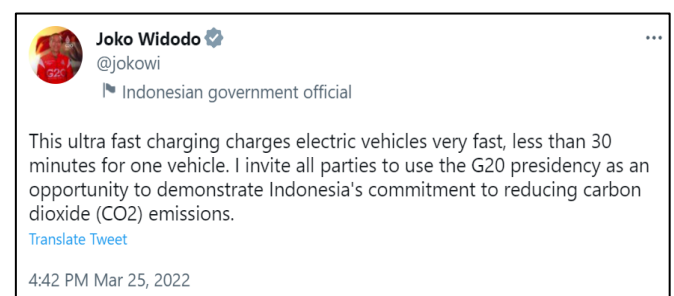
electric vehicles. The data obtained from the coding results are then used to answer research questions.

## 3. RESULT AND DISCUSSION

### 3.1 Policy campaign on Twitter: Electric vehicles and climate change

The Indonesian government is trying to encourage the use of electric vehicles as one of the steps to tackle climate change. Some of the policies implemented by the government to encourage the use of electric vehicles include: First, fiscal incentives, namely, the government provides fiscal incentives in the form of discounts for electric vehicles to motivate consumers to buy electric vehicles. Second, charging infrastructure to expand battery charging infrastructure (EV charging stations) throughout Indonesia to make it easy for consumers to recharge their electric vehicle batteries. Third, R&D and national production. The government coordinates with companies and industries to develop and produce local electric vehicles to strengthen national competitiveness and reduce dependence on imports. Fourth, promotion and education: The government encourages the public to increase awareness and understand the benefits of using electric vehicles, such as lower operational costs and a cleaner environment [28].

Although there are still some challenges to overcome, such as the high cost of buying electric vehicles and inadequate charging infrastructure, the Indonesian government continues to work to accelerate the transition to a greener and more environmentally friendly electric vehicle system. This is done by campaigning to use electric vehicles on social media to prevent climate change. The Indonesian government's campaign on using electric vehicles and climate change issues on Twitter can be found on official government accounts, such as the official account of the Indonesian president, @jokowi. In addition, government campaigns are also traced through search results on relevant keywords, including (electric vehicles and climate change).

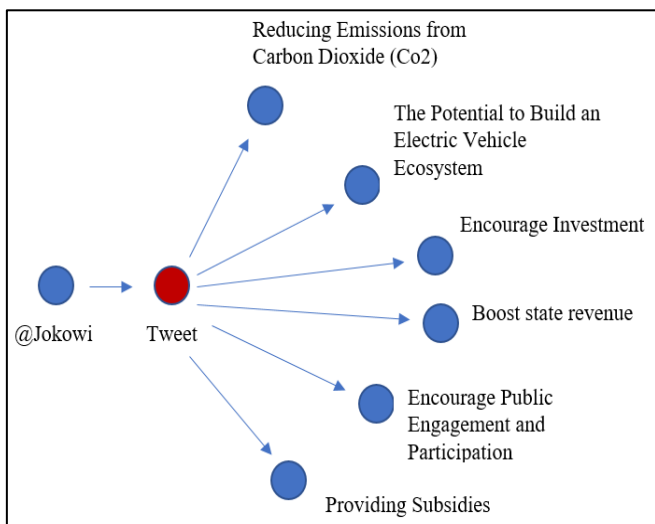


**Figure 1.** A sample of a government campaign on Twitter  
Source: Twitter search, 2023

Figure 1 shows that the Indonesian government, through the Indonesian president (@jokowi), continues to encourage and campaign for the benefits, adoption and acceleration of the transition to the use of electric vehicles to prevent the adverse effects of climate change. Using electric vehicles can reduce carbon dioxide emissions because electric vehicles do not produce exhaust emissions like internal combustion engines that use fossil fuels [29]. The campaign by the Indonesian government is carried out by relying on social media to influence public response to get involved in the same

movement. The campaign by the Indonesian government regarding the use of electric vehicles is positive because it can reduce carbon dioxide (CO<sub>2</sub>) emissions. These efforts have contributed to reducing the impact of climate change.

Some of the campaign topics that the Indonesian government generally discusses regarding electric vehicles and climate change issues are seen as follows:



**Figure 2.** Mapping on government campaign topics on Twitter

Source: Processed by researchers using Nvivo 12 Plus, 2023

Figure 2 shows that the Indonesian government is trying to encourage the use of electric vehicles to tackle climate change. Some of the campaign topics focused on reducing carbon dioxide (CO<sub>2</sub>) emissions, the potential for building an electric vehicle ecosystem, boosting investment, boosting state revenues, encouraging public involvement and participation, and providing subsidies. These are the dominant topics discussed by the Indonesian government in supporting the implementation of policies on the use of electric vehicles, primarily to address the problem of climate change.

The relevance of the campaign topics explains that using electric vehicles can reduce carbon dioxide emissions [30]. It can help reduce carbon emissions and the adverse effects of climate change [31]. Using electric vehicles can help reduce carbon emissions because electric vehicles do not produce direct emissions when used. However, carbon emissions can occur during the production of electric vehicle batteries and the production of electricity to charge these batteries if the electricity source used still comes from fossil fuels [32]. Therefore, to optimize the reduction of carbon emissions from the use of electric vehicles, it is necessary to use renewable and cleaner electricity sources and battery technology that is more environmentally friendly [33].

For battery technology that is more environmentally friendly, much development is currently being carried out to produce batteries with more environmentally friendly materials and recycle unused batteries [34]. In addition, liquid battery technology is an alternative option that is considered more environmentally friendly because it can be recycled and quickly recharged [35].

Another relevance is to emphasize that Indonesia has great potential in developing battery technology that is more environmentally friendly because it has reserves of mineral resources needed to manufacture batteries, such as nickel,

cobalt and copper [36]. Mineral resources needed to manufacture batteries, such as nickel, cobalt and copper, are abundant in Eastern Indonesia, particularly in Sulawesi, Maluku and Papua [37]. However, mineral resources are also helpful for battery manufacture in other parts of Indonesia, such as Sumatra and Kalimantan [38].

In addition, Indonesia also has a large market for electric vehicles and the potential to develop a national battery industry that can meet domestic needs and export its products [39]. The Indonesian government has committed to developing the national battery industry and promoting more environmentally friendly battery technology through programs such as Making Indonesia 4.0 and the Golden Indonesia Movement. In addition, several private companies in Indonesia have also invested heavily in developing battery technology and producing batteries, including batteries for electric vehicles [40].

With significant resource and market potential, as well as government and private support, Indonesia has an excellent opportunity to become a significant player in the global battery industry and develop more environmentally friendly battery technology in the future. Indonesia has great potential to build an electric vehicle ecosystem because it has mineral resources such as nickel, cobalt and copper, which are needed to manufacture electric vehicle batteries. In addition, the Indonesian government has encouraged the use of electric vehicles through various fiscal and non-fiscal incentives. However, the challenge that must be overcome is infrastructure development. It requires a considerable investment from many people.

In building an electric vehicle ecosystem, investors who can provide funds to support the technology development, production and infrastructure of electric vehicles are needed. Investors can come from various sources, such as the government, private companies, financial institutions, or individual investors [41]. With investors, the development of the electric vehicle ecosystem can be realized more quickly. It can significantly impact efforts to prevent climate change and reduce dependence on fossil fuels. There is support from investors who support the development of the electric vehicle ecosystem, and it is considered that it will affect the increase in state revenue.

Apart from investment from investors, public support and participation are also very important in building an electric vehicle ecosystem [42]. Public participation can encourage the adoption of electric vehicles by buying electric vehicles and reducing the use of fuel-engined vehicles [43], as well as championing policies that support the development of electric vehicles [44]. Community support can also encourage the development of battery charging infrastructure and raise awareness of environmental and health benefits of electric vehicles. Thus, community participation and support can accelerate the development of the electric vehicle ecosystem and promote environmental sustainability.

In addition, government subsidies can be a way to encourage public participation in promoting electric vehicles and building a sustainable electric vehicle ecosystem [45]. Government subsidies can take many forms, such as fiscal incentives, such as tax exemptions or non-fiscal incentives, such as easy access to electric vehicle lines and battery charging stations [46]. By providing government subsidies, electric vehicles can be more affordable and encourage people to buy electric vehicles.

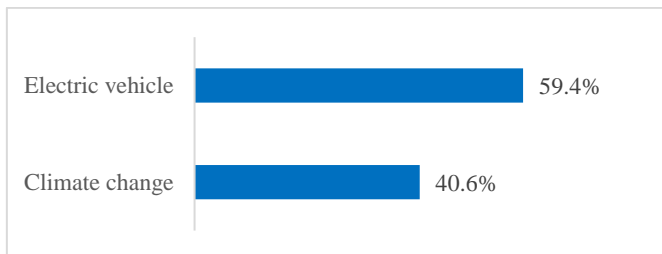
It could also encourage companies to produce electric

vehicles at more affordable prices and attract investors to invest in the electric vehicle industry. However, it should be noted that government subsidies can only be one of many ways to encourage public participation in building a sustainable electric vehicle ecosystem. In addition, this needs to be balanced with other policies, such as developing battery charging infrastructure and increasing public awareness about the benefits of electric vehicles for the environment and health.

Based on the topics campaigned by the government about electric vehicles and climate change issues on social media, it is known that the Indonesian government is severe and concentrates on aspects related to reducing carbon dioxide (CO<sub>2</sub>) emissions, the potential for building an electric vehicle ecosystem, encouraging investment, boosting state revenues, encourage public involvement and participation, and provide subsidies. The government's campaign on these aspects is expected to encourage discussion and public response. The campaign is also helpful in educating the public about sustainable development and climate change issues, especially regarding awareness and adoption of the use of electric vehicles in the future.

### 3.2 Online public response: Electric vehicles and climate change issues

The Indonesian government has campaigned for using electric vehicles to support efforts to prevent climate change and received a response from the public. Public response is critical in addressing climate change because the public plays a significant role in influencing other people's actions, including the government. The public's response to this government policy can be seen from the frequency of public discussions on social media.



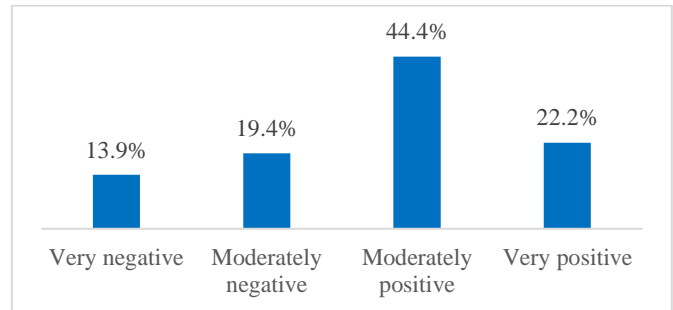
**Figure 3.** Frequency of public discussion on electric vehicle policy and climate change issues

Source: Processed by researchers using Nvivo 12 Plus, 2023

Figure 3 shows that the government's campaign about electric vehicles to prevent climate change has sufficiently influenced the responses of other social media users. The frequency of public discussion on social media appears quite varied. Public discussions about electric vehicles were identified as (59.4%), while discussions about climate change were (40.6%). The high frequency of public discussion on social media indicates that users or the public are interested in issues regarding electric vehicles and climate change. Social media is essential in raising awareness and promoting electric vehicles and climate change in Indonesia. The Indonesian government, through the use of social media, is considered successful in temporarily educating the public about the benefits of electric vehicles and how to reduce carbon dioxide (CO<sub>2</sub>) emissions. By utilizing social media, the government can quickly inform the public about electric vehicles and climate change policies and promote programs aimed at

increasing the adoption of electric vehicles and reducing the impact of climate change.

A question arises whether the frequency of public discussions can legitimize public support for the government or vice versa. Thus, this study continues its analysis by assessing public sentiment.



**Figure 4.** Public sentiment on policies regarding electric vehicles

Source: Processed by researchers using Nvivo 12 Plus, 2023

Figure 4 shows that the frequency of public discussion on social media about electric vehicles can be legitimized as a positive response. It is known through the results of public sentiment (44.4%), which is considered relatively positive. It also confirms that the government's campaign on electric vehicles linked to climate change issues is considered influential. Its influence can be seen from the response and public sentiment on social media. The existence of this positive influence is necessary because the presence of public support can help government policies to be implemented optimally.

Public responses on social media regarding electric vehicles related to issues around climate change may vary depending on different contexts and social environments. Some people may strongly support electric vehicles and efforts to reduce carbon dioxide emissions, while others may be sceptical or even reject them. Several factors can influence public response on social media about electric vehicles and climate change, namely the level of public awareness and understanding of environmental impacts [47].

Accurate campaigns and information from the government can also influence public response on social media about electric vehicles and climate change. It is based on the function of social media, which can form online social attachments [48]. It also impacts the public's willingness to be involved in informed campaign messages [49]. The effectiveness of climate change campaigns on Twitter can vary depending on many factors, including the number and quality of messages, target audience, and communication strategies. Twitter is a social media platform that enables people to quickly and widely share information, ideas and opinions [50]. In the context of climate change campaigns, Twitter can promote awareness and action on the issue in a way that is easily accessible and spreads quickly [51].

By adopting the policy for using electric vehicles, campaigns on Twitter related to climate change issues can be effective if the messages conveyed are clear, easy to understand, and relevant to the intended target audience [52]. Campaigns can also rely on hashtags, soliciting participation from Twitter users through invitations to share their experiences and opinions, as well as showing concrete evidence and solutions related to climate change. However,

the effectiveness of climate change campaigns on Twitter can sometimes be affected by restrictions on the number of characters and the ability to control public narratives, which parties often use with specific interests. In this case, the role of traditional media and private organizations or civil society organizations can help strengthen campaign messages and expand their reach [53].

#### 4. CONCLUSIONS

The urgency of public awareness on the issue of climate change is evidenced by government policies on the prospect of using electric vehicles. This is useful for reducing carbon dioxide emissions and preventing the adverse effects of climate change. Thus, a more adaptive campaign model is needed. The Indonesian government maximizes the use of social media such as Twitter. This study found that the government's use of social media can educate and influence public response to support government policies on the use of electric vehicles, including climate change issues. This study found several dominant topics campaigned by the government, including; aspects of reducing carbon dioxide (CO<sub>2</sub>) emissions, the potential for building an electric vehicle ecosystem, encouraging investment, boosting state revenues, encouraging public involvement and participation, and providing subsidies. The government highlights this topic on social media to influence public response and support for government policies regarding adaptation to the use of electric vehicles in the future.

The contribution of this study is seen as a form of support for efforts to prevent climate change globally, especially in Indonesia. The limitation of this study lies in the use of social media platforms that only rely on Twitter, so further research is needed that can explore the use of other social media platforms. That might help find a more representative campaign model going forward.

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