Influencing sustainable consumer behavior on electricity consumption – Insights from an environmental documentary

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Abstract. Consumption of products that are produced by a massive exploration of natural resources should be extensively communicated. A story delivered in a documentary movie can be adopted to deliver compelling messages to the audience. This study aims to explore the insights embedded in an environmental documentary to provide input and suggestions for promotional messages. In addition, it is also to provide a framework to foster people’s sustainable behavior on electricity consumption. The methodology has applied a qualitative approach by conducting a thematic analysis. The data was drawn from a story of an environmental documentary that showed mining activities to produce electricity. It revealed some insights that can be adopted as messages for promoting consumption reduction on electricity.

1. Introduction
Our behavior and activities have an unprecedented impact on environmental degradation [1]. We need to be aware the natural resources that have been exploited to produce energy, electricity, and more, are not ever abundant. In addition, the world’s population keeps growing with more limited resources. It will indeed cause environmental pressures on the earth if our current consumption remains unchanged. Hence, becoming more conscious of our choices that are more environmentally friendly can have a substantial positive impact on our lives [2].

According to the literature, there are several strategies to change sustainable consumer behavior. However, this research focuses on exploring and providing insights as the messages to promote sustainable behavior. Particularly to encourage the consumer to change their behavior on electricity consumption to make a significant difference to the environment.

The research subject of the paper is documentaries. It has been used to show the fundamental problems of various social issues, including environmental damages. Environmental documentaries have been researched in some contexts to influence people’s behavior. Some research has shown that documentaries can be an effective medium to influence people’s attitude and behavior, such as in the marine sector [3], pro-environmental behavior [4], environmental literacy and environmental awareness [5–7]. Meaningful insights were extracted from a documentary using a qualitative research method.

1.1. Research questions
There is still little known on textual analysis of a documentary to extract the insights of the messages it tries to deliver. In addition, there is also still little effort to utilize documentaries as source of material
for research [8]. Therefore, this research aims to explore the insights embedded in an environmental documentary movie to provide input for promotional messages to influence people behavior. It is also to provide a framework to shift people’s sustainable behavior.

It is expected by knowing and understanding the messages, it could be applied in a green campaign to highlight a responsible consumption of energy. On the other side, documentaries can also be more utilized as source of material for research.

1.2. Research objectives
In order to answer the research questions, the objectives of this paper are twofold: (1) to provide some insights that can be meaningful messages in promoting responsible consumption on electricity; and (2) to discuss the way how to influence sustainable consumer behavior in electricity consumption.

2. Literature review
2.1. Sustainable consumer behavior in electricity consumption
Our daily activities, such as working, enjoying entertainment, cooking, communicating and many more, influence electricity consumption. However, most of the time, we are not aware of how the electricity has been produced. The mining activities involved in producing this good, apart from its contribution to the country’s economic development; nevertheless, it also has left negative impacts on the ecosystem. The activities contribute greatly to the environmental damages and social economical state of the people around the mining area [9–12]. Therefore, responsible consumption of electricity should be given a special attention.

Sustainability behavior can be defined as actions that reduce negative environmental consequences and natural resource consumption throughout a product’s, behavior’s, or service’s lifecycle [13]. Moreover, White et al., (2019) added that sustainable consumer behaviors can include voluntarily reduce or simplify one’s consumption in the first place; choosing products with sustainable sourcing, production and features; conserving energy, water and products during use; and utilizing more sustainable modes of product disposal [13].

This research focuses on electricity consumption as it is commonly consumed in many places, such as households, factories, offices, and stores. Electricity generation and consumption have put considerable pressure on the environment since most countries rely mainly on fossil fuels (such as oil, gas, and coal) to meet their demands [2], including Indonesia.

Sustainable consumer behavior in electricity consumption should make people more aware of the social and environmental impacts of the goods and services they enjoy. Consequently, people need to be more conscious of the impacts of their behavior on the environment [2]. They also need to be well informed that the natural resources will not always be abundant. Thus, to achieve this objective, the paper tries to find more insights into the messages adopted to influence people’s behavior change.

2.2. Documentary movies on environmental issues
As the source of data, the paper utilized the existence of environmental documentaries. Documentary movies serve an important role in shaping how we perceive the world. It also educates ourselves and builds our empathy for others’ lived experiences [14]. There are several environmental documentaries that tell stories about environmental issues in Indonesia. For example, “Seaspiracy” (2021). It is a documentary movie about uncovered sea crimes. The story is about the traditional fishermen that are kept marginalized from the big fishing industry. The movie that Ali Tabriz directed exposes the legal and illegal stories of the fishing industry in Indonesia that has contributed to the environmental damages to the ocean [15].

A local documentary about the environmental and conspiracy/corruption issues is “Our mothers’ land”. It is a movie directed by Leo Plunkett that presents the bitterness and struggle of women against the domination of corporations that destroy the environment. The interesting part of the movie focuses on the stories of the resistance movements initiated and organized by women. The movie was released amidst the environmental issues that arose after the controversial the Minerba (Mineral and coal
mining) Law (2020), and the Omnibus Law / Job Creation Act (2020) have been passed as the Law by Indonesia’s parliament [16].

Another movie is the “Sexy Killers” (2019) [17]. “Sexy Killers” is a documentary film directed by Dandhy Dwi Laksono and Ucok Suparta. It tells a story about social, economical and environmental damages caused by the coal mining industry and the relations between different mining enterprises and political elites in Indonesia [18]. During the 19th International Anti-Corruption Conference – virtual edition in 2020, some documentaries were screened during the session of the Anti-Corruption Film Festival. Among them were “Amazon, The New Minamata” (2020) from Brazil that is about the contamination of mercury and other heavy metals that entered the ecosystem of the Amazon river; “Wood” (2020) situated in the forests in Romania and Peru that tells sad reality because of illegal logging in a global business; and the “Sexy Killers” from Indonesia.

The “Sexy Killers” was chosen to be the object of the research that data was extracted from this documentary. Apart from the agenda of this movie which is not only to raise the environment awareness, but also some political issues, however this research focuses only on the issue of the environmental damages caused by the mining activities.

2.3. Persuading people on sustainable behavior change

The paper focuses on applying Norms Activation Model (NAM) by Schwartz (1977) to this research context. According to NAM, personal norms are activated when an individual is aware of a threat posed to an object they value and accept responsibility [19]. Personal norms are the direct antecedent to perform prosocial behavior. Personal norms in this theory represent moral obligations [20], and environmental issues are in the domain of morality. Thus, it makes NAM an appropriate theory to analyze the behavior related to protecting the environment.

As the framework to guide consumer behavior changing, this paper focuses on adopting persuasion theory developed by Cialdini [21-22]. The theory can be helpful to implement the techniques to influence people on electricity consumption. Cialdini organizes his influence techniques according to some principles. It includes reciprocity, scarcity, authority, consistency, contrast, social proof and liking [21,22]. The description of each technique is presented in Table 1.

| Techniques   | Rules                                                                                           |
|--------------|-------------------------------------------------------------------------------------------------|
| Reciprocity  | People try to repay, in kind, what another person has provided them                             |
| Scarcity     | Opportunities seem more valuable when they are less available                                  |
| Authority    | People tend to defer to legitimate authorities as a decision-making shortcut                    |
| Consistency  | Once people making a choice or take a stand, they encounter personal or interpersonal pressures to behave consistently with that commitment |
| Contrast     | The sequence of message stimuli can make a difference in how people perceive them               |
| Social proof | People determine what is correctly by finding out what other people think is correct           |
| Liking       | Similarity and familiarity tend to increase liking, and liking is influential when it is perceived as mutual. |

The proposed interventions following this theory will be further elaborated in the discussion section.
3. Methodology
The paper will answer the research questions above with a qualitative approach. The data was extracted from an environmental documentary, “The Sexy Killer”. According to Belk (2011), the ranges of analyzing documentary source material are from content analysis and semiotics to proxemics and narrative analysis [8]. In this research, the data were analyzed using thematic analysis extracting only from the text of the movie. Thematic analysis is a method for “identifying, analyzing, and reporting patterns or themes within data” [24]. Because of its adaptability, the prevalence of particular acts can be determined. The technique aids in the extraction of key insights that are dependent not only on quantifiable measures but also on how the data relates to the research question.

According to Miles and Huberman (1994), cited by Bernard (2000), the search for themes can begin with general themes derived from literature, adding more themes and sub-themes as the analysis progresses [25]. Moreover, the researcher will have a general idea of what they are looking for and be aware of the data’s patterns yet remain in a discovery mode. To make a more systematic data analysis, NVIVO software (version 11) was used.

To ensure the integrity and competence in this qualitative research, reliability and validity need to be established. Thus, the procedures adopted the criteria proposed by Bryman (2004) to establish trustworthiness. The criteria include credibility, transferability, dependability and confirmatory [26]. Credibility has been maintained by choosing a documentary that has received a global recognition. “Sexy Killers” was screened during the 19th International anti-corruption conference in 2020. Besides, the movie also received Ramon Magsaysay award in 2021 [27]. Transferability was determined by the ability of the movie to show a nationwide problem. It relied on the thick descriptions of events, people, beliefs, and knowledge on the research subject. To ensure the dependability, discussions between the author and academic peers / colleagues have been developed to ensure that the decisions were not made in isolation. Confirmatory was developed by finding some other secondary materials regarding the research subject to ensure a consistent research approach [28-31].

4. Analysis and discussion
4.1. The grand themes from thematic analysis
In “Sexy Killers”, there is exploitation in the mining industry, resulting in substantial damage to the environment and ecosystem. The documentary has shown some grand themes that are extracted from sub-themes and basic themes. The basic themes were found from the verbatim of the narrator and informants in the movie. An example on how data was extracted using thematic analysis is presented in Figure 1.

![Figure 1. Thematic analysis coding using verbatim data extraction](image-url)
As the grand themes found from the analysis are: (1) The production of coal has been damaging the environment; (2) Economic activities were destroyed; (3) Damaging social life; (4) Social responsibility should be given during the mining activities; and (5) Alternative renewable energy sources.

The results of the analysis that shows the grand themes are presented in Table 2. Every grand theme was built based on some sub-themes that (some of them) were derived from some basic themes.

The first grand theme was built based on some sub-themes that showed reality about clean water problems, danger tailing ponds, damaged forests and sea life, pollution (because of dust and mercury) that is damaging people’s health and a sub-them of damaged (cracked) houses because of the constant and heavy mining activities.

“Ordinary people like us are suffering. What do we get? Just the waste, mud” (A lady showing the mud that caused problems on paddy fields irrigation and drinking water)

| Basic themes                  | Frequency of sources | Sub-themes                      | Frequency of sources | Grand themes                          |
|-------------------------------|----------------------|---------------------------------|----------------------|----------------------------------------|
| Clean water problem           | 0.34%                | Environment impacts             |                      |                                        |
| Danger tailing ponds          | 0.89%                |                                 |                      |                                        |
| Damaging the forests          | 0.15%                |                                 |                      |                                        |
| Damaging the sea life         | 4.47%                |                                 |                      |                                        |
| Pollution: dust, mercury      | 11.33%               | Damaging people’s health        | 11.33%               |                                        |
| Houses were cracked           |                      |                                 | 2.16%                |                                        |
| Job activity affected (farmers, fishermen, salt farmers) | 5.91% | Threaten on people’s economic activities | 11.45% | Economic activities were destroyed (2) |
| Tailing ponds endaring children’s safety (casualty happened) | 0.89% |                                 |                      |                                        |
| Unfairness                    | 5.82%                | Responsibility from the         | 6.45%                |                                        |
|                               |                      | Social responsibility           |                      |                                        |

Table 2. Grand themes extracted from the data using thematic analysis
People protest 6.77% mining companies and government (4)

Possibility for solar energy 4.45% Alternative renewable energy (5)

The second grand theme on economic activities, was built based on some sub-themes that showed farmers, fishermen and salt farmers have been affected by the mining activities. They experienced problems such as the plants did not grow, less harvesting time, disrupted waterways for the paddy fields, and no fish and salt.

“It has been declining because our bait is no longer effective. There are many ships and barges sailing, so we cannot go all the way west over there. At least on the safe zone, off this power plant. Over there is no longer safe. It is difficult will all these barges” (S, a fisherman).

The third grand theme on social life was built based on themes such as casualty caused by the abandoned coal mining pit; thus, it endangered their safety.

“There were at least 32 lives lost from 2011 until 2018 due to drowning in abandoned mining pit in East Kalimantan alone. Nationally between 2014 and 2018 the total death toll was 115 lives” (The narrator)

The sub-themes that formed the fourth grand theme were the need for deforestation and a safer environment for the people around the mining activities. Finally, the fifth grand theme was built by sub-themes of alternative renewable energy.

“I think the solution is collective in-situ that is spread across the users. The space required for solar power correlates with the electricity consumption; thus, it should be proportionate with the electricity used (in a particular household/place)” (GK).

4.2. Fostering people sustainable behavior towards electricity consumption

4.2.1. The activation of personal norms

This research adopts the theory of Norms Activation Model (NAM) developed by Schwartz (1977) to guide the behavior change. Schwartz’s (1977) NAM theory has been used in various studies to explain a wide range of prosocial intentions and behaviors, such as pro-environmental behavior. Prosocial behavior is often associated with morality [32]. In de Groot and Steg (2009), prosocial behavior is defined by Aronson, Wilson & Akert (2005) as any act that can benefit other persons [33]. Individuals act prosocially, such as volunteering time to a social activity, donating money to homeless people, donating blood, food, blankets, etcetera to the victim of natural disasters and many more.

Norms Activation Model (NAM) theory consists of awareness of consequences, responsibility and personal norms. The use of the theory aims to activate the moral obligation of the individuals. Problem awareness and responsibility play important roles in the development of personal norms that affect prosocial intentions [33]. The process of NAM theory is presented in Figure 2.

![Figure 2. Norms Activation Model (adopted from Schwartz, 1977)](image)

According to the NAM model, one must be aware of the consequences of their behavior before feeling responsible for engaging in that behavior. The development of moral obligation to perform or refrain...
from specific actions [34] that refer to personal norms is aided by a sense of responsibility. As a result, personal norms are the direct cause of someone’s prosocial intentions and/or behavior. In this context, personal norms refer to the moral obligation to support environmental protection. Internal sanctions will be imposed on those who fail to comply with personal norms [19]. According to Stern (2000), these internal sanctions ultimately have an impact on their behavior.

4.2.2. Adopting persuasion messages
The themes mentioned earlier in section 4.1, can be adopted when carrying out the communication task to the audience for considering sustainable behavior on electricity consumption. It is because the goods they are currently enjoying have been produced from activities that exploiting the natural resources which one day could be extinct if no appropriate action is taken. Additionally, those activities also have left negative impacts to the society around the mining activities.

Even though it is still in preliminary phase, the proposed examples of messages for campaigning sustainable behavior on electricity consumption is presented in Table 3.

Table 3. Proposed messages for the communication task

| Techniques   | Example of message                                                                 |
|--------------|-----------------------------------------------------------------------------------|
| Reciprocity  | When people do not care about the environment, it would come the negative impacts as the consequences (e.g., natural disaster). |
| Scarcity     | Indonesia is rich with its natural resources; however, it is getting scarce because of over exploitation. |
| Authority    | Provide authority figures or influencers that the audience can obey them.           |
| Consistency  | The campaign organiser can offer the audience or participants free initial activities for supporting sustainable behavior (such as join an experiment for adopting solar panel). When the participants have already perceived themselves as “customers”; it will be easier for the organiser to invite them again for the next program. |
| Contrast     | When communicating the messages, present two different scenarios or contents. For example, one message shows negative impact from the exploitation to natural resources (e.g., sickness, death, natural disaster); and another message shows a healthy ecosystem (e.g., safety and fun playground for children to play; the face of healthy and happy people because of fresh air). |
| Social proof | The organiser allows the participants to choose or vote some acts that people should do in a certain situation to strengthen social norms. |
| Liking       | The organiser can show the profile of some authority figures or awards winner with more personal details in their biographies. It can increase the like of people because they find familiarity or similarity with themselves. |

5. Conclusions
By exposing to a number of environmental issues through the messages containing the themes extracted, it is expected that it can develop people’s perspective, critical thinking and sense of relevance that leads to developing a more pro-environmental attitude and behavior. It is expected that when consumer demand can be shaped into eco-friendly alternatives and aware of their energy consumption, it will raise awareness of sustainable business. The limitation of the research that currently, it is only containing the analysis of one documentary. As the recommendation, researcher could further involve more documentaries as the research object to utilize more on these sources. Additionally, a research to test further on the acceptability of the message’s concepts for campaign programs can be conducted.

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