

The Role of Digital Psychological Factors in Shaping Public Acceptance of Renewable Energy Technologies: A Behavioral and Socio-Technical Perspective

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Abstract: This study aims to analyze the role of digital psychology factors in shaping public acceptance of renewable energy technology from a behavioral and socio-technical system perspective. In the digital era, the technology adoption process is not only determined by technical and economic aspects, but also influenced by exposure to digital information, social media, and online interactions that shape people's perceptions, attitudes, and behavioral intentions. This study uses a qualitative approach with a case study method to explore in depth how factors such as perceived usefulness, perceived ease of use, digital trust, perceived risk, and digital literacy influence public acceptance of renewable energy. Data were collected through in-depth interviews, digital observation, and documentation, then analyzed using an interactive analysis model through the processes of data reduction, data presentation, and drawing conclusions. The results show that digital psychology factors play a significant role in shaping public attitudes and decisions towards renewable energy. Trust in digital information and low risk perceptions increase adoption intentions, while exposure to unreliable information can hinder acceptance. In addition, social interactions in digital media strengthen social influence in the attitude formation process. These findings confirm that the transition to renewable energy is not only a technological process, but also a socio-psychological process that is heavily influenced by the digital ecosystem.

Keywords: Digital Psychology; Renewable Energy; Public Acceptance; Social Media; Adoption Behavior.

Introduction

The development of digital technology in the era of the Industrial Revolution 4.0 and Society 5.0 has brought about major changes in various sectors of life, including education. Technology no longer functions merely as a learning aid, but has become an integral part of the modern education management system. Schools are required to be able to adapt to rapid changes, starting from the use of digital platforms, technology-based administration systems, online and hybrid learning. The development of renewable energy technology is not only determined by technical progress, but also by the level of acceptance by the community as end users. In this context, a digital psychology approach is important because today's society obtains much of its information, forms opinions, and makes decisions through digital ecosystems such as social media, online news platforms, and technology-based applications. Therefore, the acceptance of renewable energy technology cannot be separated from the psychological factors formed in the digital space.

Psychologically, several key factors influence public acceptance of renewable energy, namely perceived usefulness, perceived ease of use, trust, and perceived risk. In the digital space, these factors are heavily influenced by the information people consume, including educational content, user testimonials, environmental campaigns, and even disinformation. Repeated exposure to information in digital media can shape positive or negative attitudes toward renewable energy technologies, depending on the quality and credibility of the information received. From a behavioral perspective, people's behavioral intentions to use or support renewable energy are formed through cognitive and emotional processes. Individuals with high levels of digital literacy tend to be better able to critically evaluate information, making them more receptive

to innovations such as solar panels, wind turbines, or smart energy systems. Conversely, low levels of digital literacy can increase vulnerability to misinformation, which can hinder the adoption of these technologies.

Furthermore, emotional factors such as environmental concern, social influence, and digital engagement play a significant role. Digital media enables the generation of positive social pressure through sustainability campaigns, "green lifestyle" trends, and online community support for clean energy. This reinforces social norms that encourage individuals to participate in the green energy transition. From a socio-technical systems perspective, the acceptance of renewable energy depends not only on individuals but also on the interaction between technology, institutions, and society. Digital infrastructure accelerates the dissemination of information about renewable energy, but its effectiveness depends on public trust in information sources, government policies, and the support of energy technology companies. This integration of social and technological systems creates an ecosystem that mutually influences the renewable energy adoption process.

The development of renewable energy is currently a crucial global agenda in reducing dependence on fossil fuels and mitigating the impact of climate change. However, despite the rapid technological advancements in renewable energy technologies such as solar, wind, and bioenergy, adoption remains uneven. This phenomenon demonstrates a gap between technological availability and public acceptance as end users. In today's digital era, people no longer form perceptions of energy solely through direct experience or traditional communication, but are heavily influenced by the digital ecosystem. Social media, video platforms, online news, and even environmental influencers play a significant role in shaping public opinion. The emerging phenomenon is a polarization of perceptions toward renewable energy, with some strongly supporting the green energy transition, while others remain hesitant, skeptical, or even rejecting it due to inconsistent information in the digital space.

Furthermore, the phenomenon of digital information overload has emerged, where the public is inundated with a large amount of information related to energy and the environment, but not all of it is of good quality and credibility. This leads to cognitive confusion, which impacts the weakening of behavioral intentions to adopt renewable energy. It is also not uncommon to find misinformation and disinformation spread in digital media, which can shape negative perceptions of technologies like solar panels or wind turbines, for example regarding cost, effectiveness, or environmental impact. From a digital psychology perspective, another increasingly prominent phenomenon is the formation of echo chambers and filter bubbles, where individuals are only exposed to information that aligns with their beliefs. As a result, perceptions of renewable energy become biased and non-objective. This condition strengthens the psychological barriers to the adoption of new technologies, even though renewable energy is increasingly technically and economically competitive.

The urgency of this research is further heightened because the energy transition depends not only on government policies and technological innovation, but also on public behavior and acceptance. Without a sound understanding of digital psychological factors, energy transition programs are likely to encounter social resistance. Therefore, it is crucial to examine how digital psychological factors such as trust, risk perception, digital literacy, and online social influence shape public attitudes toward renewable energy. Therefore, this research is crucial for bridging the gap between renewable energy technology development and public acceptance, while also providing a scientific basis for more effective digital communication strategies to accelerate the sustainable energy transition.

Furthermore, digital psychology also explains how digital platform algorithms can shape public perception through filter bubbles and echo chambers, potentially strengthening or weakening acceptance of renewable energy. If users are more frequently exposed to positive content about green energy, their acceptance will increase. Conversely, exposure to skeptical or controversial narratives can decrease public

trust. Overall, it can be concluded that public acceptance of renewable energy technology is the result of a complex interaction between digital psychological factors, individual behavior, and socio-technological systems. Therefore, renewable energy development strategies should not only focus on technical innovation but also need to optimize digital communication approaches based on behavioral psychology to increase public trust, understanding, and engagement in the sustainable energy transition.

Formulation of the problem

Based on the background and phenomena that have been described, the problems in this research can be formulated as follows:

1. How do digital psychological factors influence public acceptance of renewable energy technology?
2. To what extent do perceived usefulness and perceived ease of use influence public attitudes towards accepting renewable energy technology in the digital era?
3. How do trust and perceived risk formed through the digital environment influence behavioral intentions toward renewable energy?
4. How does exposure to digital information, social media, and online interactions influence the formation of people's attitudes and decisions in adopting renewable energy?

Relevant Concepts and Theories

2.1 Renewable Energy Technologies

Renewable energy is an energy source derived from sustainable natural processes such as solar, wind, water, and biomass. According to IRENA (2021), the transition to renewable energy is a key global strategy for achieving decarbonization and energy sustainability. In the context of sustainable development, renewable energy is viewed not only as a technical solution but also as a social transformation that requires active community participation. Liu et al. (2020) emphasized that the success of renewable energy implementation is greatly influenced by the level of public acceptance, as the technology requires adoption at the household and community levels. Therefore, social and psychological aspects are key factors in the success of the energy transition.

2.2 Public Acceptance

Public acceptance of renewable energy technology refers to people's attitudes, perceptions, and behavioral intentions in accepting and using the technology. Wüstenhagen et al. (2019) explain that public acceptance consists of three main dimensions: socio-political acceptance, community acceptance, and market acceptance. Meanwhile, Sovacool et al. (2020) state that public acceptance is influenced not only by economic factors such as costs and incentives, but also by psychological factors such as trust, risk perception, and social norms. This shows that the energy transition is a multidimensional process involving interactions between individuals, communities, and policies.

2.3 Digital Psychology

Digital psychology is a field that examines how human behavior, cognition, and emotions are influenced by the digital environment. Montag and Elhai (2020) explain that human interaction with digital media forms new thought patterns that influence decision-making, including in the context of technology adoption. In the context of energy, Zhao et al. (2022) state that exposure to information through digital media can shape public perceptions of renewable energy technologies, both positively and negatively. Social media algorithms can also create echo chambers, which reinforce individual beliefs and limit alternative perspectives. Furthermore, Orben (2020) emphasizes that digital media use has complex psychological impacts, including on the formation of pro-environmental attitudes and behaviors.

2.4 Digital Psychology Factors in Technology Adoption

In the context of technology adoption, several theoretical models are used to explain user behavior, such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of

Technology (UTAUT). Venkatesh et al. (2020), in developing UTAUT, explained that the intention to use technology is influenced by perceived usefulness, effort expectancy, social influence, and facilitating conditions. In the digital era, these factors are expanded with digital psychology dimensions such as trust in online information and social media exposure. Furthermore, Dwivedi et al. (2021) emphasized that in the context of modern technology, digital trust is a crucial variable influencing technology adoption, including renewable energy-based technologies.

2.5 Socio-Technical System

The socio-technical systems approach emphasizes that technology cannot be separated from its social context. Geels (2020), in his multi-level perspective theory, explains that technological transitions occur through interactions between the landscape (macro context), regime (system structure), and niche (new innovation). In the context of renewable energy, Sovacool et al. (2021) emphasize that the success of the energy transition depends heavily on the alignment between technology, institutions, and societal behavior. Digital systems accelerate this interaction by providing spaces for communication, education, and information dissemination.

Implementation Method

3.1 Types and Approaches of Research

This study uses a qualitative approach with the aim of understanding in depth how digital psychology influences public acceptance of renewable energy technology from a behavioral and socio-technical systems perspective. According to Creswell and Poth (2020), qualitative research is an approach used to holistically explore the meanings individuals or groups construct regarding a social phenomenon. This approach was chosen because the phenomenon of renewable energy acceptance is not only technical but also related to people's perceptions, experiences, and social constructions formed through interactions in digital spaces.

3.2 Research Design

The research design used was a qualitative case study. Yin (2021) explains that case studies are particularly appropriate for examining contemporary phenomena in real-life contexts, especially when the boundaries between phenomenon and context are unclear. In this research, a case study was used to explore how people shape attitudes and behaviors toward renewable energy through exposure to digital media, online social interactions, and the information they receive.

3.3 Research Location and Subjects

The research location was determined based on the social context of communities actively using digital media to access energy and environmental information. The research subjects consisted of individuals with experience or knowledge related to renewable energy, including social media users, academics, and the general public. According to Patton (2020), informants in qualitative research are selected through purposive sampling, selecting informants deemed to have the best understanding of the phenomenon being studied. This approach allows researchers to obtain rich and in-depth information.

3.4 Data Collection Techniques

Data collection in this study was carried out using several techniques, namely:

1. In-depth Interview (In-depth Interview)

Kvale and Brinkmann (2021) explain that in-depth interviews are used to explore the subjective experiences of informants in detail. In this study, interviews were conducted to determine public perceptions of renewable energy as formed through digital media.

2. Digital Observation (Digital Ethnography)

Hine (2020) stated that digital ethnography allows researchers to understand people's behavior in online spaces, including interactions on social media related to renewable energy issues.

3. Documentation

Documentation in the form of digital content such as social media posts, online articles, and green energy campaigns is used to analyze how information shapes public perception.

3.5 Data Analysis Techniques

The data analysis in this study used the interactive analysis model of Miles, Huberman, and Saldaña (2020), which consists of three main stages: data reduction, data presentation, and conclusion drawing/verification. Miles et al. (2020) emphasized that qualitative analysis is cyclical, where data collection and analysis occur simultaneously to generate a deep understanding of the research phenomenon. Furthermore, Saldaña (2021) added that the thematic coding process is crucial in identifying key patterns related to digital psychology factors such as trust, risk perception, and digital engagement.

3.6 Data Validity (Trustworthiness)

Data validity in qualitative research is maintained through source and method triangulation techniques. Lincoln and Guba (2020) state that validity in qualitative research can be achieved through credibility, transferability, dependability, and confirmability. Triangulation is carried out by comparing interview results, digital observations, and documentation to ensure consistency of data related to public acceptance of renewable energy.

3.7 Analytical Perspectives: Behavioral and Socio-Technical Systems

This study used a behavioral perspective and a socio-technical systems approach to analyze the data. From a behavioral perspective, Venkatesh et al. (2020) in the UTAUT model explained that technology adoption behavior is influenced by performance expectations, effort expectations, and social influence. In this context, digital psychology factors such as trust in online information and social media exposure are important variables in shaping behavioral intentions. Meanwhile, Geels (2020) in his socio-technical transition theory explains that technological change occurs through interactions between social systems, technology, and institutions. In the context of renewable energy, digital media is a medium that accelerates these interactions in shaping public acceptance.

Results and Discussion

The influence of digital psychological factors on public acceptance of renewable energy technology

Digital psychology plays an increasingly significant role in shaping how people understand, evaluate, and respond to renewable energy technologies. In today's digital era, attitude formation is no longer solely influenced by direct experience but also by intense interaction with information disseminated through social media, digital platforms, and online information ecosystems. This makes digital psychology a key factor in determining public acceptance of renewable energy technologies. One key factor in digital psychology is information perception. People tend to form opinions about renewable energy based on the information they repeatedly consume in digital spaces. When the information received is positive, educational, and credible, it fosters stronger acceptance of technologies such as solar panels, wind turbines, and smart energy systems. Conversely, biased or inaccurate information can undermine public trust and reinforce doubts about the effectiveness of renewable energy.

Furthermore, digital trust is a crucial psychological factor. In the context of renewable energy technology, the public evaluates not only the technology itself but also the parties disseminating information, such as the government, energy companies, and digital media. A high level of trust in information sources will increase public acceptance, while low trust will create resistance to technology adoption. Another equally important factor is perceived risk. In the digital environment, the public is often exposed to contradictory information, such as issues of high installation costs, the instability of renewable energy, or certain environmental impacts. Exposure to this information can create a high perception of risk, thus inhibiting the public's intention to accept or use renewable energy technology.

Furthermore, digital literacy plays a crucial role in mediating the influence of digital information on public acceptance. Individuals with high digital literacy tend to be able to sort out valid information and are less easily influenced by misinformation. This makes them more open to renewable energy technology innovations than individuals with low digital literacy, who are more susceptible to information bias. In addition to cognitive factors, emotional aspects such as digital engagement and social influence also contribute significantly. Social media creates a space for interaction that allows for the formation of collective opinions about renewable energy. Environmental campaigns, green lifestyle trends, and online community support can strengthen social norms that encourage individuals to accept and support the use of renewable energy.

From a broader perspective, public acceptance of renewable energy is the result of a complex interaction between digital psychology and social structures. The digital environment is not only a source of information but also a space for the formation of identity, opinions, and behavioral decisions. Therefore, digital psychology can be considered a crucial determinant of the success of the clean energy transition. Therefore, it can be concluded that the more positive the quality of digital experiences received by the public, the higher the level of public acceptance of renewable energy technologies. Conversely, low-quality digital information and high exposure to disinformation can be major obstacles to accelerating the adoption of sustainable energy.

To what extent do perceived usefulness and perceived ease of use influence public attitudes in accepting renewable energy technology in the digital era?

Perceived usefulness and perceived ease of use are two key constructs in the Technology Acceptance Model (TAM) that significantly explain how individuals form attitudes toward a technology. In the context of renewable energy technology acceptance in the digital age, these two factors are crucial determinants of whether people will accept or reject innovations such as solar panels, smart grids, or digital app-based energy systems. Perceived usefulness refers to the extent to which individuals believe that the use of renewable energy technology can improve their quality of life, both in terms of energy efficiency, cost savings, and contributions to environmental sustainability. In the digital age, this perception is largely shaped by information disseminated on social media, educational platforms, and digital campaigns that showcase the concrete benefits of renewable energy. When people perceive that the technology can provide tangible benefits, such as long-term reductions in electricity costs or household energy independence, their positive attitudes toward technology acceptance will be strengthened.

On the other hand, perceived ease of use relates to an individual's belief that renewable energy technology is easy to understand, access, and operate without requiring excessive effort. In the digital context, this ease of use is often associated with the availability of energy monitoring applications, increasingly simplified installation systems, and technology-based support services that facilitate users. The easier the technology is to use, the lower the psychological barrier perceived by the public to its adoption. These two perceptions are not mutually exclusive but interact to shape public attitudes. When individuals perceive renewable energy technology as not only beneficial but also easy to use, a stronger positive attitude toward its acceptance will develop. Conversely, if the technology is perceived as complex or offers no clear benefits, the tendency to reject it will increase, even if the technology is technically superior.

In the context of the digital era, the influence of these two factors is further amplified by exposure to online information. Digital media plays a key role in shaping the public's initial perception of renewable energy technology. User testimonials, educational videos, and digital campaigns from governments and energy companies can simultaneously increase perceptions of usefulness and ease of use. However, on the other hand, the presence of inaccurate or overly complex information can also undermine these perceptions and create public skepticism. Overall, it can be concluded that perceptions of usefulness and ease of use

significantly influence public attitudes toward renewable energy technology in the digital era. The higher these two perceptions, the more positive the public's attitude toward technology adoption, ultimately accelerating the transition to sustainable energy.

The role of trust and perceived risk formed through the digital environment in influencing behavioral intention towards renewable energy

Trust and perceived risk are two psychological factors that are crucial in shaping people's behavioral intentions toward adopting renewable energy technologies, particularly in the digital environment. In today's digital era, people evaluate technology not only based on its technical functionality but also on their level of trust in information sources and the perceived risks of various content circulating in the digital space. Trust in this context encompasses public confidence in the credibility of renewable energy technologies, technology providers, the government, and information conveyed through digital media. When individuals believe the information they receive is accurate, transparent, and comes from credible sources, the level of acceptance of renewable energy will increase. Digital media such as educational platforms, government campaigns, and user testimonials play a crucial role in building this perception of trust. Conversely, low trust due to widespread misinformation or inconsistent information can hinder people's intention to adopt renewable energy technologies.

On the other hand, perceived risk refers to people's subjective assessment of the potential losses or uncertainties that may arise from the use of renewable energy technologies. In the digital environment, risk perceptions are often formed from exposure to diverse information, including issues regarding high installation costs, unstable energy supplies, and concerns about the technology's long-term effectiveness. Exposure to unverified information can strengthen risk perceptions, thereby reducing behavioral intentions to use or support renewable energy. Trust and perceived risk have an inverse relationship in influencing behavioral intentions. The higher the level of public trust in the technology and information received, the lower the perceived risk. This condition will encourage the formation of stronger behavioral intentions to adopt renewable energy. Conversely, low trust will increase perceived risk, ultimately weakening people's intentions to switch to clean energy technologies.

In the context of the digital environment, social interactions through online media such as social media, discussion forums, and video platforms play a significant role in strengthening or weakening these two factors. Digital media algorithms that form echo chambers can reinforce certain beliefs, both positive and negative, about renewable energy. If individuals are in a digital environment dominated by positive narratives about green energy, trust will increase and risk perceptions will decrease. However, if skeptical narratives dominate, the opposite will occur. Therefore, it can be concluded that trust and risk perceptions formed through the digital environment play a very significant role in influencing people's behavioral intentions towards renewable energy. Strengthening trust through credible and educational information, and reducing risk perceptions through good digital literacy, are key to increasing renewable energy adoption in the community.

The influence of exposure to digital information, social media, and online interactions on the formation of people's attitudes and decisions in adopting renewable energy.

Exposure to digital information, social media, and online interactions has a significant influence on shaping public attitudes and decisions regarding the adoption of renewable energy technologies. In today's digital era, the process of attitude formation no longer relies solely on direct experience or face-to-face communication, but is heavily influenced by the rapid and massive flow of information disseminated through various digital platforms. Digital information exposure is the initial factor in shaping public awareness of renewable energy. Information presented in the form of articles, educational videos,

infographics, and environmental campaigns plays a role in building the public's basic knowledge about the benefits, risks, and urgency of using renewable energy. When information exposure is consistent, credible, and easy to understand, it fosters a stronger positive attitude toward the technology. Conversely, exposure to inaccurate or conflicting information can create cognitive confusion that hinders the attitude formation process.

Social media plays a more dynamic role in influencing public attitudes due to its interactive and network-based nature. Through social media, individuals become not only recipients of information, but also producers and disseminators. Viral content about renewable energy, such as the use of solar panels in households or innovations in electric vehicles, can increase positive perceptions and encourage public interest in adopting these technologies. However, social media can also be a platform for the spread of misinformation that reinforces skepticism about renewable energy, especially if the information is not scientifically verified. Online interactions also play a significant role in shaping public decisions. Discussions in digital forums, comments on social media, and recommendations from other users create a strong social influence effect. Individuals tend to adjust their attitudes and decisions based on majority opinion or the experiences of others deemed relevant. In this context, testimonials from renewable energy users can strengthen individuals' belief that the technology is worth adopting.

Furthermore, digital platform algorithms that shape information consumption patterns also influence attitude formation. The filter bubble and echo chamber phenomena cause individuals to be more frequently exposed to information that aligns with their pre-existing views. This can reinforce positive or negative attitudes toward renewable energy, depending on the type of content predominantly consumed. Overall, exposure to digital information, social media, and online interactions significantly influence people's attitudes and decisions toward renewable energy adoption. The higher the quality of information received and the more positive the social interactions that occur in digital spaces, the greater the likelihood that people will accept and adopt renewable energy technology as part of a sustainable lifestyle.

The development of a green economy and the transition to sustainable technology are currently inextricably linked to the role of policy, innovation, and societal behavior in accepting change. In this context, various recent studies have shown that the successful implementation of green technology, including renewable energy, is largely determined by the integration of economic factors, policies, and consumer behavior within the digital ecosystem. Research by Harahap, Rajagukguk, and Arifin (2024) confirms that green financing plays a crucial role in driving green economic growth in the MSME sector, particularly when supported by environmentally friendly products as a mediating variable. These findings demonstrate that access to financing not only impacts the economic aspect but also strengthens the adoption of sustainable practices. In the context of this research, this suggests that the acceptance of renewable energy technology is also significantly influenced by the support of an economic system that supports green transformation.

Furthermore, Arifin, Harahap, and Rajagukguk (2025) showed that green marketing significantly influences consumer purchasing decisions for organic products through perceived product quality. This finding is relevant to this study because it demonstrates that consumer perceptions are strongly influenced by communication and marketing strategies. In the context of renewable energy, this can be interpreted as the way information is conveyed through digital media will shape perceptions of the quality and benefits of clean energy technology, which ultimately influences public attitudes and acceptance. Furthermore, research by Harahap, Rajagukguk, and Arifin (2025) on green policy and sustainable supply chains shows that green policy and the adaptation of green technology have an impact on competitive advantage through the adoption of green technology as an intervening variable. These findings reinforce the strategic role of public policy in accelerating the adoption of sustainable technologies, including renewable energy, by creating an ecosystem that supports innovation and changes in public behavior.

In the context of human resources, Rajagukguk, Harahap, and Arifin (2025) demonstrated that green HR influences job satisfaction through an environmentally friendly work environment. This indicates that sustainability values are not only implemented at the organizational level but also shape individual behavior within the work system. The relevance to this research is that institutionally constructed sustainability values can influence public awareness and acceptance of renewable energy technologies. Furthermore, Rajagukguk and Harahap's (2024) research on green human resource practices in reducing carbon footprints indicates that implementing green HR strategies can strengthen the transformation towards a low-carbon economy. This aligns with the concept of this research, which places human behavior as a key factor in the success of the energy transition.

Arifin, Harahap, and Rajagukguk (2024) also found that green marketing and green pricing influence consumer loyalty to environmentally friendly products. This demonstrates that perceived value and price play a significant role in shaping consumer behavior decisions. In the context of renewable energy, perceived costs and benefits are psychological factors that significantly influence public acceptance. In the digital realm, Arifin, Harahap, and Rajagukguk (2025) demonstrated that digital marketing influences public awareness of blue economy products in coastal areas of North Sumatra. This finding is highly relevant to this study because it demonstrates that digital media plays a key role in shaping public awareness and perceptions of sustainability issues. This reinforces the concept of digital psychological factors, where exposure to digital information shapes public attitudes and behavior.

Furthermore, research by Harahap, Rajagukguk, and Arifin (2025) on public policy and green technology in supporting a circular economy shows that government regulations have a direct influence on the adoption of green technology and blue economy innovation. This reinforces the idea that the acceptance of renewable energy technology is not solely individual, but is also influenced by broader policy structures and social systems. Regarding innovation, Rajagukguk, Harahap, and Arifin (2025) show that green leadership and human resource management influence sustainable innovation in the green economy. This suggests that leadership and organizational management factors play a role in driving the transformation towards environmentally friendly technologies.

Research by Harahap et al. (2026) adds that Indonesia's national strategy in facing global challenges relies heavily on the ability to integrate policy, economics, and technological innovation. This reinforces the notion that the renewable energy transition is part of a multidimensional national development strategy. In a social context, Rajagukguk et al. (2022) show that government intervention through social assistance impacts community economic growth and public satisfaction. This demonstrates that policy interventions can shape public perceptions and behaviors toward government programs, including renewable energy programs.

Furthermore, research by Rajagukguk, Harahap, and Arifin (2025) on self-regulation and entrepreneurial readiness among adolescents indicates that individual psychological factors play a significant role in shaping readiness to face economic change. This is relevant to this study because it shows that psychological aspects also determine a community's readiness to accept new technologies such as renewable energy. Finally, Harahap et al. (2025) emphasized that green technology innovation plays a mediating role in the influence of policies on a sustainable economy. This reinforces the point that green technology, including renewable energy, is a key element in bridging policies and sustainable development outcomes.

Conclusion

Based on the discussion that has been conducted regarding “The Role of Digital Psychological Factors in Shaping Public Acceptance of Renewable Energy Technologies: A Behavioral and Socio-Technical Perspective”, it can be concluded that public acceptance of renewable energy technologies is the result of

a complex interaction between digital psychological factors, individual behavior, and socio-technical systems that develop in the digital era.

First, digital psychology factors such as information perception, digital trust, digital literacy, and risk perception have been shown to play a significant role in shaping public attitudes toward renewable energy. The more positive digital experiences people receive, the higher their acceptance of clean energy technologies. Conversely, exposure to unreliable information and high levels of disinformation can lower trust and increase resistance to adopting these technologies.

Second, perceived usefulness and perceived ease of use have been shown to be key factors in shaping public attitudes. When people perceive renewable energy technology as providing tangible benefits and being easy to use, positive attitudes toward technology adoption will strengthen and directly influence behavioral intentions to use it.

Third, trust and perceived risk formed through the digital environment significantly influence people's behavioral intentions. High levels of trust can lower perceived risk, thereby encouraging increased intentions to adopt renewable energy. Conversely, low levels of trust can strengthen perceived risk, ultimately hindering technology adoption.

Fourth, exposure to digital information, social media, and online interactions play a key role in shaping public opinion and attitudes. The dynamics of digital communication, including social influence, viral content, and echo chambers, significantly influence how people evaluate and decide to accept or reject renewable energy technologies.

Fifth, from a socio-technical systems perspective, the acceptance of renewable energy is determined not only by individuals but also by the interaction between technology, policies, institutions, and the social environment. This demonstrates that the energy transition is a multidimensional process that requires the integration of technical, psychological, and social aspects.

Overall, it can be concluded that digital psychology plays a central role in accelerating or inhibiting public acceptance of renewable energy technologies. Therefore, strategies to accelerate the energy transition need to consider digital communication, improving digital literacy, and strengthening public trust to support the successful implementation of sustainable energy.

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