



Neuro Leadership and Cognitive Immunity: Formulating Leadership Strategies to Counter Radicalism

Hefniy¹, Halimatus Sa'diyah^{2*}, Muhammad Imron³, Fadlillah⁴

^{1,2} Universitas Nurul Jadid, Indonesia

³ Universitas Islam Negeri Kiai Haji Achmad Siddiq, Indonesia

⁴ University Sultan Zainal Abidin, Malaysia

DOI: <https://doi.org/10.61987/bamj.v1i1>

Article History:

Received: 10 April 2026

Revised: 12 May 2026

Accepted: 20 June 2026

Keywords:

Neuro Leadership, Cognitive Immunity, Radicalism, Social Resilience, Leadership.

*Correspondence Address:

Email: sadiyabaja25@gmail.com

Abstract:

Radicalism in the digital era develops through the dissemination of information that takes advantage of people's cognitive vulnerabilities, especially in groups with low digital literacy and limited critical thinking skills. This condition requires the presence of a leadership strategy that is not only oriented towards social control, but also able to strengthen people's cognitive resilience. This study aims to analyze the role of Neuro Leadership in building social resilience, identify the cognitive vulnerability of society to radical narratives, and formulate a leadership strategy model based on Neuro Leadership and Cognitive Immunity to counter radicalism. The research uses a qualitative approach with a case study type. Data were collected through in-depth interviews, observations, and documentation, then analyzed using the interactive model Miles, Huberman, and Saldaña. The results show that vulnerability to radical narratives is influenced by low digital literacy, dominance of emotional responses, and weak information verification capabilities. In addition, leadership based on empathy, persuasive communication, and social trust building has proven effective in strengthening community resilience. This research produced a Neuro Leadership–Cognitive Immunity model that integrates critical literacy, emotion regulation, strengthening social networks, and optimizing digital media. These findings contribute to the development of the study of leadership and the prevention of radicalism through a multidisciplinary approach that is adaptive to the challenges of the digital age.

INTRODUCTION

Radicalism is one of the social challenges that continues to develop in various countries, including Indonesia, because it has a wide impact on social stability, security, and community development (Tyagi et al., 2024). Research on leadership strategies to counteract radicalism is important because this phenomenon is not only related to acts of violence, but also to the process of forming mindsets that can influence the behavior of individuals and groups (Revilla-Briceño et al., 2025; Srivastava & Kukreja, 2025). In a society that is increasingly digitally connected, the spread of radical ideology takes place faster through social media, online forums, and various other communication channels (Shalihin, 2025). Various reports show that vulnerable groups, especially the younger generation, are the main targets of the spread of radical narratives due to the high intensity of digital technology use and limited ability to verify information (Bennett et al., 2024). This condition demands the presence of a preventive approach that not only focuses on security aspects, but also on strengthening the cognitive capacity of the community and the quality of local leadership (Singha, 2024). Therefore, research on Neuro Leadership and Cognitive Immunity is relevant because it offers a multidisciplinary approach that is able to strengthen the resilience of

individuals and communities to the influence of radical ideologies in a sustainable and contextual manner in the life of modern society (Thatta et al., 2024).

Although various radicalism prevention programs have been implemented by the government, educational institutions, and community organizations, the threat of the spread of radicalism is still a complex problem (Erdoğan, 2023; Thatta et al., 2024). One of the causes is a change in the pattern of spreading ideology that is increasingly adaptive to technological developments and social dynamics. Radicalism no longer develops through formal networks or closed groups alone, but also through digital spaces that allow the rapid and massive dissemination of messages (Handoyo et al., 2024; He, 2023). In addition, the low ability of some people to sort information makes them vulnerable to propaganda, disinformation, and narratives that manipulate emotions and group identities (Shafieioun & Haq, 2023). On the other hand, local leadership often does not have adequate instruments to detect the early symptoms of radicalization and build the psychological resilience of the community systematically. As a result, prevention efforts tend to be reactive after certain indications or cases appear. This problem shows that society needs a more adaptive leadership model, based on understanding human behavior, and able to build cognitive resilience to various forms of ideological influence that have the potential to disrupt social harmony and community unity (Drolet & Williams, 2026; Syahriani & Aziz, 2026).

Probolinggo Regency is an area that has social, cultural, and religious diversity that is an important capital in maintaining a harmonious community life. However, like other regions in Indonesia, Probolinggo is not completely detached from the potential for the spread of radical ideas that develop through various modern communication channels (Hsiao & Pfaff, 2022; Ruipérez & Sánchez, 2026). Phenomena in the field show that the increasing use of digital media has opened up opportunities for people to access a wide range of information without limits, including content that contains elements of intolerance and radicalism. Several studies and prevention programs conducted in the East Java region show that the young age group has a high level of exposure to digital information, so it requires strengthening literacy and critical thinking skills (Miconi et al., 2024; Rothut et al., 2026; Yu et al., 2024). In addition, community leaders, religious leaders, and local leaders have a central role in shaping people's perceptions and social behaviors. However, this role is often not supported by an approach that is able to explain how people's cognitive and emotional processes are formed when receiving certain information. This condition shows the need for a more innovative leadership strategy to strengthen community resilience to radicalism at the local level.

Research on radicalism has developed in various perspectives, ranging from security studies, education, psychology, to communication. Most previous studies have explained that radicalism is influenced by various factors such as social inequality, identity crises, political marginalization, narrow religious understanding, and exposure to extreme information through digital media (Cano-Cruz, 2026; Kumari, 2025). Other research highlights the importance of moderation education, strengthening national values, and community empowerment as strategies to prevent radicalism. In the context of leadership, a number of studies show that leaders have a strategic role in building social cohesion, creating trust, and reducing potential conflicts in society (Wolfowicz et al., 2022). However, most of these studies still view leadership from an organizational or social perspective alone without linking it to neurological mechanisms that influence human behavior (Samaratunge, 2026). As a result, there are still limitations in understanding how a leader can influence the thought process, regulation of emotions, and decision-making of society in the face of radical narratives. The gap shows the need for a new approach that integrates the dimensions of leadership and neuroscience in the context of radicalism prevention.

On the other hand, the concept of Cognitive Immunity began to develop as an approach that describes an individual's ability to protect himself or herself from misleading,

manipulative, and potentially damaging information (Bostanli, 2023; Madrid et al., 2025). Various studies show that individuals who have good cognitive resilience tend to be better able to recognize disinformation, propaganda, and various forms of psychological manipulation spread through digital media (Pundt & Venz, 2025; Wang, 2025). However, most of Cognitive Immunity's research still focuses on the context of media literacy, hoaxes, and information security. Research linking Cognitive Immunity to radicalism prevention efforts is still relatively limited, especially in the context of local Indonesian communities (McDermott, 2025; Rao et al., 2024). In addition, there have not been many studies that integrate the concept of Cognitive Immunity with Neuro Leadership as a leadership strategy that is able to build social resilience in a systematic manner (Madrid et al., 2025; Ruipérez & Sánchez, 2026). These limitations indicate a significant research gap because there is no conceptual model that explains the relationship between neurological processes of leadership, people's cognitive resilience, and the prevention of radicalism. Therefore, this research is here to fill this gap through a more comprehensive and contextual approach.

The novelty or state of the art of this research lies in the integration of two concepts that have been developed separately, namely Neuro Leadership and Cognitive Immunity, in the formulation of leadership strategies to ward off radicalism in Probolinggo Regency. Neuro Leadership provides a theoretical foundation on how brain function affects leadership processes, decision-making, emotional management, and the formation of social relationships. Meanwhile, Cognitive Immunity offers a framework for understanding how individuals and communities can develop resilience to information that is manipulative and radical in nature. The integration of the two concepts results in a new perspective that places leadership not only as a process of influencing others, but also as a mechanism for building the cognitive resilience of society collectively. This approach differs from previous research that emphasizes security, education, or communication aspects separately. Thus, this research has the potential to produce a preventive leadership model that is able to strengthen people's ability to recognize, resist, and deal with various forms of radical narratives that are developing in the increasingly complex digital and social era.

Based on this description, this research departs from the question of how Neuro Leadership and Cognitive Immunity can be formulated into effective leadership strategies to ward off radicalism in Probolinggo Regency. This problem is important because the current prevention strategy still tends to focus on structural approaches and has not fully touched the cognitive and neurological aspects that affect people's behavior. The main argument of this study is that leadership based on understanding the brain's working mechanisms, emotion management, and mindset formation will be more effective in building people's resilience to radical ideologies. In addition, Cognitive Immunity is believed to function as a psychological defense system that helps people recognize and reject various forms of propaganda and information manipulation. By integrating these two concepts, this research is expected to produce a more adaptive, preventive, and evidence-based model of leadership strategies. The contribution of this research not only enriches the development of theory, but also provides practical recommendations for local governments, educational institutions, religious leaders, and the community in an effort to prevent radicalism in a sustainable manner.

RESEARCH METHODS

This study uses a qualitative approach with a case study type because it aims to understand in depth the social phenomena related to the formulation of leadership strategies in counteracting radicalism through the perspective of Neuro Leadership and Cognitive Immunity. The qualitative approach allows researchers to gain a comprehensive understanding of the experiences, views, interpretations, and practices carried out by leaders and stakeholders in building societal resilience to the influence of radical ideologies.

Meanwhile, the case study was chosen because the research focuses on one specific context, namely Probolinggo Regency, which is seen as a social system with unique and specific characteristics in facing the challenge of radicalism. Through a single case study design, this study explores the phenomenon in depth in a real-life context to uncover the relationship between leadership, community cognitive processes, and radicalism prevention efforts that develop at the local level. This approach allows researchers to obtain a detailed picture of the social, cultural, and institutional dynamics that influence the effectiveness of leadership strategies in strengthening community resilience, while generating contextual understanding that can contribute to the development of leadership theories and practices based on Neuro Leadership and Cognitive Immunity in the prevention of radicalism.

This research was carried out in Probolinggo Regency, East Java Province, which was selected based on academic and empirical considerations relevant to the focus of the research. Probolinggo Regency has high social, cultural, and religious diversity, so it is a representative context to examine the dynamics of the community's social resilience to the influence of radical ideologies. In addition, the region has a strategic position in various programs to strengthen religious moderation, community development, and radicalism prevention involving local governments, educational institutions, community organizations, religious leaders, and local communities, providing opportunities for researchers to obtain rich data on leadership practices at the local level. On the other hand, the development of information technology and the high use of digital media, especially among the younger generation, present new challenges in the form of increased exposure to information that has the potential to contain elements of intolerance and radicalism. This condition makes Probolinggo Regency the right location to study the formulation of leadership strategies in building people's Cognitive Immunity to various radical narratives. In addition, the limited research that integrates the perspectives of Neuro Leadership and Cognitive Immunity in the context of radicalism prevention in this region further strengthens the academic and empirical relevance of the selection of research locations.

Data collection in this study was carried out through three main techniques, namely in-depth interviews, observations, and documentation, in order to obtain comprehensive and in-depth data related to the formulation of leadership strategies in counteracting radicalism. In-depth interviews were conducted in a semi-structured manner with informants who were selected purposively based on their involvement and knowledge on issues of leadership, social resilience, and radicalism prevention, which included local government officials of Probolinggo Regency, religious leaders, community leaders, leaders of educational institutions, administrators of community organizations, academics, observers of radicalism issues, and the young generation as a group that actively uses digital media. This technique aims to explore perceptions, experiences, strategies, and challenges faced in building community resilience to radicalism. In addition, observations were carried out directly on various social, educational, and religious activities related to strengthening the values of tolerance, moderation, and community resilience to obtain data on social behaviors, interaction patterns, and leadership practices that develop in the community. Meanwhile, documentation is used to complement the data of interview and observation results through the analysis of various documents, such as local government programs and policies, reports on community organization activities, documents of educational institutions, mass media publications, statistical data, official reports related to the prevention of radicalism, and archives of social and religious activities, which function as secondary data sources in strengthening the results of the research.

The data analysis in this study uses the interactive model of Miles, Huberman, and Saldaña (2014) which includes the stages of data condensation, data reduction, data presentation, and verification and conclusion drawn. Data condensation is carried out by selecting, simplifying, focusing, and transforming data from interviews, observations, and

documentation that are relevant to the research focus, namely Neuro Leadership, Cognitive Immunity, and radicalism prevention strategies. Furthermore, the data was reduced through the grouping of information into themes such as the role of leadership, people's cognitive resilience, the use of digital media, and strategies to strengthen social resilience. The reduced data is then presented in the form of narratives, matrices, tables, and conceptual charts to facilitate the identification of patterns and relationships between categories. The final stage is carried out through continuous verification and conclusion drawing to ensure the consistency, validity, and accuracy of research findings.

RESULTS AND DISCUSSION

Results

The Dynamics of Society's Cognitive Vulnerability to Radical Narratives in the Digital Era

The dynamics of people's cognitive vulnerability to radical narratives in the digital era refers to conditions when individuals or groups of people have different levels of ability to receive, process, evaluate, and verify information obtained through digital media. In the context of Probolinggo Regency, cognitive vulnerability is found mainly in young age groups who have a high intensity in the use of social media, but have not been fully balanced with critical thinking skills and adequate digital literacy. This vulnerability can be seen from the tendency of some people to receive information based on emotional closeness, similarity of identity, and source authority without conducting an in-depth verification process. This condition opens up opportunities for the entry of intolerance narratives, hate speech, and radical ideas that are persuasively packaged through various digital platforms.

The results of an interview with a leader of an educational institution show that the young generation in Probolinggo Regency is very active in using social media as the main source of information. The informant stated, "Most students obtain religious and social information from social media. They often share information before confirming its truth because they think the information comes from a trusted account." The statement shows that the level of trust in the source of information is often more dominant than the information verification process itself. According to the researchers' interpretation, this condition reflects the existence of cognitive biases that cause individuals to more easily receive information that is in accordance with their group's beliefs or identities, thus increasing vulnerability to the spread of radical narratives in the digital space.

Similar findings were obtained from interviews with religious leaders who are active in community development. The informant explained, "Content that contains provocations usually attracts public attention faster because it uses emotional language and touches on the issue of religious identity. People often react before understanding the context of the information in its entirety." Based on this statement, the researcher interprets that the dominance of the emotional aspect in information consumption is an important factor that affects the acceptance of radical narratives. Narratives that are built through fear, anger, or threats to group identity tend to be more acceptable than rational and argumentative information. This situation shows that people's cognitive vulnerability is not only influenced by low digital literacy, but also by the ability to regulate emotions when dealing with provocative information.

The results of observations conducted in several youth communities, educational institutions, and religious forums show that the use of social media has become an important part of people's daily lives. Researchers found that most participants were more active in accessing information through digital platforms than formal information sources. In addition, it was found that there is a tendency for people to trust information shared by figures or groups who are considered to have a common identity without further verification. In several community discussions, researchers also observed that participants' ability to

distinguish factual information and opinions still varied. The researcher's interpretation of the observation results shows that the digital environment has created a space that allows the dissemination of information to take place very quickly, while the community's ability to conduct critical evaluation of information has not developed evenly.

Based on the results of interviews and observations, it can be emphasized that the cognitive vulnerability of the community to radical narratives in Probolinggo Regency is influenced by three main factors, namely low digital literacy, dominance of emotional responses to information, and limited critical thinking skills in verifying information. This condition shows that society does not fully have a strong Cognitive Immunity mechanism to filter out various forms of information that have the potential to contain elements of radicalism. Thus, strengthening the cognitive capacity of the community is an important need in efforts to prevent community-based radicalism.

The pattern that emerged from the overall data showed that the higher the intensity of digital media use without adequate digital literacy and critical thinking skills, the higher the level of people's vulnerability to radical narratives. On the other hand, individuals who have the ability to verify information, control emotions, and access to credible sources of information tend to be better able to resist extreme propaganda and narratives. This pattern indicates that the development of Cognitive Immunity must be an integral part of the strategy to prevent radicalism, especially among the younger generation group who are the main users of digital media in Probolinggo Regency.

Table 1. Digital Information Exposure on People's Cognitive Vulnerability

Informant Position	Interview Excerpts	Indicator
Leaders of Educational Institutions	"Most students obtain religious and social information from social media. They often share information before confirming the truth."	Low digital literacy
Religious Figures	"Provocative content is more likely to attract public attention because it uses emotional language and identity issues."	Dominance of emotions in the reception of information
Community Leaders	"People tend to trust information sent by groups they know without checking the original source."	Group identity bias
Academy	"The people's critical thinking skills are still diverse, so not all are able to distinguish facts and opinions."	Low critical thinking skills
Youth Representatives	"Information that goes viral is usually immediately trusted and disseminated because it is considered important by peers."	The influence of social media and peer groups

Table 1 shows that people's cognitive vulnerability to radical narratives is influenced by the interaction between technological, psychological, and social factors. In terms of technology, social media is the main source of information for the community, thus determining the pattern of shaping perceptions of social and religious issues. However, high access to information is not always followed by adequate digital literacy skills. As a result, it is easier for the public to receive information without a sufficient verification process. This condition is further strengthened by social media algorithms that tend to display information that suits user preferences, thus narrowing the critical space in accepting different perspectives.

The Role of Neuro Leadership in Building Social Resilience and Preventing Radicalism

The role of Neuro Leadership in this study is interpreted as the ability of local leaders to influence people's behaviors, mindsets, and emotional responses through an approach that considers the neurological and psychological aspects of individuals. In the context of Probolinggo Regency, Neuro Leadership is realized through leadership practices that emphasize emotional management, empathy, persuasive communication, social trust

building, and the ability to make decisions that are responsive to community dynamics. Findings on the ground show that leaders who are able to understand the emotional needs of people tend to be more successful in creating a harmonious social environment that is resistant to the influence of radical ideologies. Thus, Neuro Leadership not only functions as a managerial instrument, but also as a strategic approach in strengthening social cohesion and preventing the development of radicalism at the community level.

The results of an interview with a religious leader show that an emotional and dialogical approach is the main strategy in building people's resilience to radicalism. The informant stated, "When people feel heard and appreciated, they are more open to receiving messages of moderation. We often use a dialogue approach rather than a judgmental talk." The statement shows that the emotional connection between leaders and the community has an important role in building trust. According to the researchers' interpretation, the practice reflects the principles of Neuro Leadership which places empathy and a sense of psychological safety as the main foundation in influencing people's mindsets. When individuals feel valued, defensive mechanisms tend to decline so that they are more receptive to the values of tolerance and moderation.

Similar findings were obtained from an interview with a local government official involved in a community development program. The informant explained, "We try to involve various groups of people in the decision-making process so that they feel they have a shared responsibility for the safety and harmony of the environment." The researcher interprets that community involvement in the decision-making process is able to increase a sense of belonging and strengthen trust in social institutions. In the perspective of Neuro Leadership, active community participation can stimulate the emergence of a sense of social connectedness and strengthen a positive collective identity. This condition is an important factor in reducing people's vulnerability to radical ideologies that often take advantage of feelings of alienation and social distrust.

This results of observations carried out at religious activities, youth forums, and community meetings show that local leaders have a central role in building an inclusive and dialogical interaction atmosphere. The researchers observed that religious leaders, community leaders, and leaders of educational institutions actively encouraged open discussion on social and religious issues without creating polarization among participants. Additionally, local leaders tend to use persuasive, calming language, and avoid narratives that are confrontational in nature. This condition creates a social space that allows people to express their views openly while strengthening mutual trust. According to the researchers' interpretation, the practice shows that the ability to manage collective emotions and build positive communication is an important factor in strengthening social resilience to the influence of radicalism.

Based on the results of interviews and observations, it can be affirmed that the effectiveness of leadership in preventing radicalism is not only determined by formal authority, but also by the ability of leaders to understand the cognitive and emotional aspects of society. Neuro Leadership has been proven to play a role in building social trust, strengthening community cohesion, increasing community participation, and creating an environment conducive to the spread of moderation values. In other words, the higher the leader's ability to manage emotions, build empathy, and create persuasive communication, the stronger the social resilience of the community to the influence of radical ideologies.

The patterns that emerge from the data show that effective leadership in the prevention of radicalism has the same characteristics, namely empathetic, participatory, communicative, and oriented towards building social trust. On the other hand, approaches that are authoritarian, exclusive, and have minimal emotional interaction tend to be less effective in building community resilience. These findings show that aspects of Neuro Leadership are closely related to society's ability to maintain social cohesion and reject various forms of radical narratives that develop in both digital and social environments.

Table 2 The Role of Neuro Leadership in Building Social Resilience and Preventing Radicalism

Informant Position	Interview Excerpts	Indicator
Religious Figures	"We prioritize dialogue and persuasive approaches so that people feel valued and not judged."	Empathy and persuasive communication
Local Government Officials	"The community is always involved in various programs so that there is a sense of belonging to the social environment."	Participatory leadership
Community Leaders	"Public trust is built through closeness and continuous communication."	Building social trust
Leaders of Educational Institutions	"A calming and open approach is more effective than a patronizing approach."	Emotional regulation and positive communication
Head of Youth Organization	"Younger generations are more receptive to messages when they are delivered by leaders who understand their condition."	Psychological proximity and social influence

Table 2 shows that the most dominant key dimensions of Neuro Leadership in building social resilience are empathy, persuasive communication, social trust, community participation, and emotion regulation. All informants emphasized that the success of leaders in influencing society does not solely depend on their formal position, but on the ability to build positive psychological relationships with society. These findings indicate that people are more receptive to messages of moderation when they are delivered through an approach that respects their feelings, experiences, and needs. In the perspective of Neuro Leadership, this condition is related to the creation of a sense of psychological security that encourages openness to new ideas and information.

Formulation of Leadership Strategy Model Based on Neuro Leadership and Cognitive Immunity to Counteract Radicalism

The formulation of a leadership strategy model based on Neuro Leadership and Cognitive Immunity in this study is a synthesis of various leadership practices and efforts to strengthen the cognitive resilience of the community found in Probolinggo Regency. Operationally, this model is understood as a leadership strategy that integrates the leader's ability to manage the cognitive, emotional, and social aspects of society with strengthening the community's ability to recognize, filter, and reject radical narratives. Based on field data, the model consists of four main components, namely strengthening people's critical literacy, developing empathy-based leadership and emotion regulation, strengthening community social networks, and optimizing digital media as a means of spreading moderation narratives. The four components are interrelated and form a radicalism prevention system that is preventive, adaptive, and sustainable.

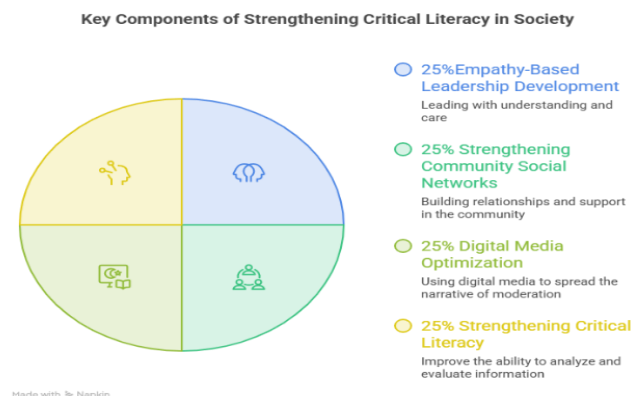


Figure 1. Key Components of Strengthening Critical Literacy in Society

The results of an interview with a local government official show that the prevention of radicalism cannot be done through a security approach alone, but must involve strengthening the capacity of the community as a whole. The informant stated, "An effective prevention program is a program that enables the public to recognize information that has the potential to divide and has a healthy dialogue space to discuss various social issues." Based on this statement, the researcher interprets that radicalism prevention strategies need to be directed at strengthening critical thinking skills and building inclusive social spaces. From the perspective of Cognitive Immunity, the ability to recognize and evaluate information independently is the main foundation in building resilience to extreme propaganda and narratives.

Another finding was obtained from interviews with the leaders of educational institutions who explained that the success of radicalism prevention is greatly influenced by the example of leaders and communication patterns built in the social environment. The informant stated, "People, especially the younger generation, are more likely to accept the values of moderation when they see real examples of leaders who are able to manage emotions, respect differences, and actively build dialogue." The researcher interprets that the Neuro Leadership aspect plays an important role in shaping the social environment that supports the development of people's cognitive resilience. Leaders' examples in managing emotions and building positive social relationships can create a sense of psychological security that encourages people to be more open to the values of tolerance and diversity.

The results of observations show that various programs that involve collaboration between local governments, educational institutions, religious leaders, and community organizations tend to be more effective in building social resilience than programs that run sectorally. The researcher observed digital literacy activities, cross-community dialogue forums, religious moderation recitations, and social media campaigns that emphasized the importance of tolerance and unity. In addition, the use of digital media as a means of education and the dissemination of moderation messages is increasingly carried out by local leaders and youth communities. Based on these observations, the researcher interprets that the integration between strengthening individual capacity and strengthening social networks is an important element in creating a sustainable radicalism prevention system.

Based on the results of interviews and observations, it can be emphasized that the formulation of leadership strategies based on Neuro Leadership and Cognitive Immunity is built through the synergy between strengthening the cognitive capacity of the community and improving the quality of local leadership. Critical literacy serves as a protective mechanism against manipulative information, while empathy, emotion regulation, and persuasive communication serve to strengthen healthy social relationships. At the same time, strengthening community networks and utilizing digital media is a means to expand the spread of moderation values. Thus, the resulting model is not only oriented towards the prevention of radicalism, but also on building social resilience in a sustainable manner.

The patterns that emerge from the data show that radicalism prevention strategies will be more effective if they integrate individual, social, and digital aspects simultaneously. Strengthening critical literacy without empathetic leadership support tends to be less than optimal, and strong leadership will not be effective if people do not have the ability to critically filter information. Therefore, the combination of Neuro Leadership and Cognitive Immunity forms a leadership model that is able to strengthen people's resilience to the influence of radical ideologies while encouraging the formation of an inclusive, resilient, and adaptive community to social change.

Discussion

The results of the study show that people's cognitive vulnerability to radical narratives in the digital era is influenced by low digital literacy, dominance of emotional responses in receiving information, and limited critical thinking skills (Shalihin, 2025; Srivastava & Kukreja, 2025; Thatta et al., 2024). These findings are in line with various studies on digital radicalism that explain that social media has become the primary medium for the spread of extreme ideologies through the exploitation of users' cognitive and emotional biases (Drolet & Williams, 2026; He, 2023; Syahriani & Aziz, 2026). The concept of Cognitive Immunity put forward in various contemporary studies asserts that individuals who have the ability to verify information, think reflectively, and critically are more likely to be more resistant to disinformation and propaganda (Ruipérez & Sánchez, 2026; Yu et al., 2024). The findings of this study strengthen this argument by showing that people who do not have adequate digital literacy skills are more susceptible to receiving identity- and emotion-based information than fact-based information (Drolet & Williams, 2026; Hsiao & Pfaff, 2022). However, this study provides a more contextual perspective because it shows that these vulnerabilities are not only influenced by individual factors, but also by the social environment and communication patterns that develop in the people of Probolinggo Regency.

The findings on the role of Neuro Leadership in building social resilience also show compatibility with neuroscience-based leadership theories that emphasize the importance of empathy, emotion regulation, persuasive communication, and social trust building in influencing individual and group behavior (Rao et al., 2024; Shalihin, 2025; Shukla et al., 2024; Singha, 2024; Tyagi et al., 2024). Previous research has shown that leaders who are able to create a sense of psychological safety tend to be more successful in building social engagement and reducing potential conflicts in the community. The results of this study strengthen this view by finding that religious leaders, community leaders, and leaders of educational institutions who use a dialogical and participatory approach are more effective in conveying the values of moderation to the community (Ruipérez & Sánchez, 2026; Thatta et al., 2024). However, this study offers a different contribution because it places Neuro Leadership as an instrument for preventing radicalism, not just as an approach to improving organizational performance. Thus, this study expands the scope of the application of Neuro Leadership theory into the context of building social resilience and preventing radical ideologies at the community level.

Furthermore, this research resulted in the formulation of a leadership strategy model based on Neuro Leadership and Cognitive Immunity which consists of four main components, namely strengthening people's critical literacy, developing empathy-based leadership and emotion regulation, strengthening community social networks, and optimizing digital media as a means of disseminating moderation narratives (Handoyo et al., 2024; Pundt & Venz, 2025). These findings show a difference with most previous studies that tend to address leadership and cognitive resilience separately (Samaratunge, 2026; Suresh & Muralidharan, 2025). This research actually found that the two concepts have a complementary relationship in building a more comprehensive radicalism prevention system. From a theoretical perspective, the results of this study contribute to the development of a new conceptual model that integrates neurological aspects of leadership with societal cognitive resilience mechanisms. The integration enriches the study of leadership, social psychology, and the study of radicalism prevention by offering a multidisciplinary approach that is more adaptive to the challenges of the digital age.

From a practical perspective, the results of this study provide important implications for local governments, educational institutions, community organizations, and religious leaders in designing strategies to prevent radicalism that are more effective and sustainable. Prevention efforts are no longer enough to be carried out through a security and enforcement

approach alone, but need to be directed at building the cognitive capacity of the community and strengthening the quality of local leadership (Drolet & Williams, 2026; George et al., 2025; Pundt & Venz, 2025). Digital literacy programs, critical thinking education, empathy-based leadership training, and the use of digital media to spread moderation narratives need to be developed in an integrated manner. In addition, collaboration between social actors is an important factor in creating a community ecosystem that is resilient to the influence of radical ideologies. Thus, the Neuro Leadership and Cognitive Immunity model produced in this study can be a conceptual and practical foundation in strengthening the social resilience of the people of Probolinggo Regency as well as a reference for other regions that face similar challenges in preventing radicalism.

CONCLUSION

This study concludes that the effectiveness of preventing radicalism is not only determined by the community's ability to filter information, but also by the quality of leadership that is able to understand the cognitive and emotional aspects of society. The most important findings of this study show that the integration of Neuro Leadership and Cognitive Immunity is able to form a more preventive, adaptive, and sustainable radicalism prevention strategy through strengthening critical literacy, empathy-based leadership, strengthening social networks, and optimizing digital media. The main lesson gained from this research is that people's resilience to radical narratives is built through the synergy between critical thinking skills and humanist and inclusive leadership. The strength of this research lies in its contribution to developing a new conceptual model that integrates the perspectives of leadership neuroscience and cognitive resilience in the study of radicalism prevention, thereby enriching the study of leadership, social psychology, and public security. However, this study has limitations because it was only conducted in one area of case study so that the findings cannot be generalized widely. Therefore, further research is recommended to test the Neuro Leadership–Cognitive Immunity model in a variety of different social and cultural contexts, as well as to combine qualitative and quantitative approaches to measure the effectiveness of the model more comprehensively and empirically.

ACKNOWLEDGEMENT

The author expresses his deepest appreciation and gratitude to the leadership of Probolinggo Regency for granting permission, support, and the opportunity to conduct this research. Their assistance and trust facilitated the data collection and implementation process, enabling this research to be successfully completed and beneficial to the development of science.

REFERENCES

- Bennett, C. N., Majumdar, A., George, T. S., & Panicker, S. G. (2024). The Neuropsychology of Leadership. In *Cognitive Behavioral Neuroscience in Organizational Settings* (pp. 195–207). <https://doi.org/10.4018/979-8-3693-1858-4.ch011>
- Bostanli, L. (2023). Narratives for Wise Thinking in Leadership: An Experiment on the Influence of Wise Leader Exemplars' Narratives on Wise Thinking in Leadership. *Psychology of Leaders and Leadership*, 26(2), 115–126. <https://doi.org/10.1037/mgr0000141>
- Cano-Cruz, P. (2026). EU Strategies for Preventing Radicalization in the Digital Age. In *Policy and Experience in the Prevention of Violent Radicalization in the European Union* (pp. 119–138). <https://doi.org/10.4324/9781003771548-8>

- Drolet, J.-F., & Williams, M. C. (2026). The Radical Right And The Ideologies of Post-Postmodern Conservatism. In *The Routledge Handbook of Ideology Analysis* (pp. 184–198). <https://doi.org/10.4324/9781003412007-15>
- Erdoğan, H. Ö. (2023). Dark Side of the Web in the Context of Online Radicalization. *Journal of Islamic Thought and Civilization*, 13(1), 34–46. <https://doi.org/10.32350/jitc.131.03>
- George, J. P., Muttungal, P. V., Davidson, B. G. J., & Priya, N. (2025). Neuroplasticity, Stress, and Resilience in the Mordern Workplace. In *Impact of Neuroplasticity on Organizational Effectiveness and Labor Productivity* (pp. 117–146). <https://doi.org/10.4018/979-8-3373-2292-6.ch004>
- Handoyo, E., Kenayathulla, H. B., & Puspita, M. A. (2024). Radicalism Prevention Through Education Strategies ZAligned with SDGs in Indonesia: Bibliometric Analysis. *E3S Web of Conferences*, 568. <https://doi.org/10.1051/e3sconf/202456804008>
- He, W. (2023). Ideological and Political Classes in Colleges and Universities under Mobile Internet Technology. *ACM International Conference Proceeding Series*, 242–248. <https://doi.org/10.1145/3606094.3606107>
- Hsiao, Y., & Pfaff, S. (2022). Explaining the Diffusion of Radical Ideas. *Sociology Compass*, 16(10). <https://doi.org/10.1111/soc4.13023>
- Kumari, S. (2025). Digital Communication: Context and Contours. In *Digital Landscape: Communication in the 21st Century* (pp. 3–16). https://doi.org/10.1007/978-981-95-0453-4_1
- Madrid, H. P., Niven, K., & Alday, R. (2025). Emotion regulation as leadership. In *Handbook of Emotion Regulation at Work* (pp. 106–123). <https://doi.org/10.4337/9781035314607.00015>
- McDermott, R. (2025). How Emotions Shape Crisis Decision-Making: The Role of Fear, Anger, and Risk. In *Inside The Situation Room: the theory and practice of crisis decision-making* (pp. 81–108). <https://doi.org/10.1093/oso/9780197791004.003.0004>
- Miconi, D., Santavicca, T., Frounfelker, R. L., Mounchingam, A. N., & Rousseau, C. (2024). Digital Media Use, Depressive Symptoms And Support For Violent Radicalization Among Young Canadians: A Latent Profile Analysis. *BMC Psychology*, 12(1). <https://doi.org/10.1186/s40359-024-01739-0>
- Pundt, A., & Venz, L. (2025). Leading with Emotional Intelligence: Recognizing, Understanding, and Controlling Emotions in the Leadership Process. In *Handbook of Leadership: Applied Business Psychology for Managers* (pp. 597–610). https://doi.org/10.1007/978-3-662-70444-8_36
- Rao, P. B., Inampudi, P., Meegada, V. B. R., & Sathyanarayana, N. (2024). The Application of Neuroscience in Leadership Development. In *Building Organizational Resilience With Neuroleadership* (pp. 113–129). <https://doi.org/10.4018/979-8-3693-1785-3.ch008>
- Revilla-Briceño, Y. T., Cieza-Mostacero, S. E., & Hidalgo-Lama, J. A. (2025). Neuroleadership in Twenty-First-Century Education: A Systematic Review. *Emerging Science Journal*, 9(Special Issue), 388–411. <https://doi.org/10.28991/ESJ-2025-SIED1-022>
- Rothut, S., Schulze, H., Hohner, J., Greipl, S., & Rieger, D. (2026). Radicalization and the internet: 25 years of (online) radicalization research. *Communication Review*. <https://doi.org/10.1080/10714421.2026.2658935>
- Ruipérez, J., & Sánchez, A. (2026). Narrative Power and Cognitive Warfare: Preventing Radicalization and Violent Extremism Through Strategic Communications. In *Policy and Experience in the Prevention of Violent Radicalization in the European Union* (pp. 139–159). <https://doi.org/10.4324/9781003771548-9>
- Samaratunge, R. (2026). Unlocking Organizational Potential: The Role of Narrative Identity. In *Translational Systems Sciences* (Vol. 47, pp. 163–173). https://doi.org/10.1007/978-981-95-0622-4_9

- Shafieioun, D., & Haq, H. (2023). Radicalization From a Societal Perspective. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1197282>
- Shalihin, R. R. (2025). Intersecting brain processes and Indigenous leadership systems: a neuroanthropological analysis of the Minangkabau community. *Social Identities*, 31(1), 99–117. <https://doi.org/10.1080/13504630.2024.2439786>
- Shukla, R. P., Taneja, S., & Saluja, S. (2024). Neuroscience of leadership. In *Building Organizational Resilience With Neuroleadership* (pp. 183–193). <https://doi.org/10.4018/979-8-3693-1785-3.ch012>
- Singha, R. (2024). Stress, Resilience, and Brain Performance. In *Building Organizational Resilience With Neuroleadership* (pp. 14–29). <https://doi.org/10.4018/979-8-3693-1785-3.ch002>
- Srivastava, S., & Kukreja, J. (2025). Neuroleadership dynamics: Driving creativity and innovation among educators. In *AI-Powered Leadership: Transforming Organizations in the Digital Age* (pp. 247–268). <https://doi.org/10.4018/979-8-3373-1687-1.ch009>
- Suresh, N., & Muralidharan, S. (2025). Reprogramming the Mind: Neuroplasticity, Stress Resilience, and Emotional Intelligence in Professional Settings. In *Impact of Neuroplasticity on Organizational Effectiveness and Labor Productivity* (pp. 69–116). <https://doi.org/10.4018/979-8-3373-2292-6.ch003>
- Syahriani, R., & Aziz, R. K. (2026). Mathematical Modelling of Fanatical Behavior Toward Radical Ideologies. *AIP Conference Proceedings*, 3389(1). <https://doi.org/10.1063/5.0318316>
- Thatta, S., Manda, V. K., & Athota, V. S. (2024). Research and Applications of Neurotechnologies for Leadership. In *Building Organizational Resilience With Neuroleadership* (pp. 36–62). <https://doi.org/10.4018/979-8-3693-1785-3.ch004>
- Tyagi, V., Kaur, H., Verma, R. R., Satija, S., & Patil, H. (2024). The role of neuroleadership in organizational success. In *Neuroleadership Development and Effective Communication in Modern Business* (pp. 292–303). <https://doi.org/10.4018/979-8-3693-4350-0.ch016>
- Wang, Y. (2025). Neuroscience of Leaders' Incivility. In *Incivility and Workplace Toxicity in P-12 Schools: The Causes, Costs, and Solutions for Educational Leaders* (pp. 38–53). <https://doi.org/10.4324/9781003503002-4>
- Wolfowicz, M., Hasisi, B., & Weisburd, D. (2022). What Are The Effects of Different Elements of Media on Radicalization Outcomes? A Systematic Review. *Campbell Systematic Reviews*, 18(2). <https://doi.org/10.1002/cl2.1244>
- Yu, J., Bekerian, D. A., & Osback, C. (2024). Navigating the Digital Landscape: Challenges and Barriers to Effective Information Use on the Internet. *Encyclopedia*, 4(4), 1665–1680. <https://doi.org/10.3390/encyclopedia4040109>