DATA-DRIVEN PUBLIC RELATIONS STRATEGY IN MADRASAHS: A NEURAL NARRATIVE INTELLIGENCE APPROACH

Ida Kusumawati
Universitas Nurul Jadid, Probolinggo, East Java, Indonesia (ideekko8@gmail.com)

Siti Khofsah
Universitas Nurul Jadid, Probolinggo, East Java, Indonesia (khofsahmarono1@gmail.com)

Rifka Jannatul Firdausiyah
Universitas Nurul Jadid, Probolinggo, East Java, Indonesia (rifkakaka33@gmail.com)

Najiburrohman
Universitas Nurul Jadid, Probolinggo, East Java, Indonesia (nageev@gmail.com)

Hasan Baharun
Universitas Nurul Jadid, Probolinggo, East Java, Indonesia (ha54nbaharun@gmail.com)

Kata Kunci:	**ABSTRACT**
Neural Narrative Intelligence, Pola Opini Publik, Strategi Hubungan Masyarakat	Opini publik saat ini berkembang begitu cepat sehingga sulit untuk memperhitungkan waktunya. Jika tidak dikelola dengan baik dan etis, dampaknya akan dirasakan secara signifikan pada madrasah, lingkungan, dan bahkan kesehatan mental masyarakat. Penelitian ini mengkaji bagaimana strategi hubungan masyarakat mengelola dan memahami opini publik menggunakan model Neural Narrative Intelligence. Metode yang digunakan dalam penelitian ini adalah pendekatan kualitatif-deskriptif dan tinjauan pustaka, dengan mengumpulkan dan menganalisis berbagai sumber referensi terkait opini publik dan strategi hubungan masyarakat. Tujuan penelitian ini adalah menghasilkan strategi hubungan masyarakat atau madrasah yang mengikuti perkembangan zaman, merespons etika publik, mempertahankan reputasi madrasah agar tetap bertahan bahkan meningkat, serta memperkuat kepercayaan publik. Hasil penelitian menunjukkan bahwa strategi hubungan masyarakat dapat merumuskan strategi yang proaktif, efektif, dan relevan serta memberikan gambaran bagaimana pola opini publik dapat dibentuk menggunakan Neural Narrative Intelligence. Studi ini berkontribusi pada manajemen pendidikan Islam dengan mengusulkan kerangka kerja kecerdasan naratif berbasis AI untuk tata kelola hubungan masyarakat yang proaktif dan etis di madrasah.

A. INTRODUCTION

In today's era of digital development, advances in information technology provide new opportunities for people to interact, exchange messages, and build public opinion (Alamsyah et al., 2024). Social media has become a crucial platform where stories and perspectives about institutions, including religious educational institutions such as madrasas, develop and even change rapidly (Kurnia & Ridwan, 2024). The phenomenon of public opinion is not just about one person's opinion, but also about shared stories that can influence trust, image, and how society views an institution (Nawar, 2024). When discussions, issues, or rumors about educational institutions emerge on social media, they spread rapidly and can enhance a positive reputation or negatively impact it if not handled properly (Laksana & Putri, 2024). Everyone can also play a role as a producer of information because social media is open and engaging (Zuniananta, 2021). This has led to a power shift in public communication, where institutions no longer determine the narrative, but the wider public, with unlimited digital access, changes it. Community optimization and involvement aims to effectively support and develop the reputation of the madrasah (Khoiroh et al., 2025).

Public relations (PR) management in madrasas remains traditional and often reactive. In other words, PR only responds when problems have already spread and threaten reputations. Failure to understand shifts in public opinion often leads to negative stories developing unchecked (Gema Irhamdhika, Nur Iman El Hidayah, 2025). The lack of an early warning system for monitoring digital conversations often means negative narratives become dominant before PR understands the root of the problem (Sarasati et al., 2025). Furthermore, few PR agencies have an organized digital information monitoring system. As a result, potential problems may not be detected early. PR strategies are not suited to modern public communication styles influenced by algorithms, viral culture, and real-time feedback because they rely on one-way communication and do not

utilize data-based insights (Putri, 2025).

Academic research on public narrative management in educational public relations is still lacking (Harditia, 2025). The approach commonly used in previous research typically only assesses public comments through sentiment categories such as "positive, negative, or neutral." This method fails to capture the reasons, patterns, or narrative flow that shape public views. Public opinion, however, is formed from a series of stories, characters, and values that emerge and are interconnected in digital conversations. This situation emphasizes the need for a deeper and more intelligent analytical model to understand how public opinion develops in the digital communication space. It is time for madrasas to build intensive communication with parents and the wider community, fostering mutually supportive and beneficial interactions (Agus, Abu Hasan, 2023). Utilizing them effectively also requires appropriate modifications and collaboration with specialists to ensure responsible integration and equitable availability within the educational environment (Sain et al., 2024).

A significant research gap exists in public relations management within educational institutions, particularly regarding the use of advanced technologies to predict and shape public opinion. While traditional methods of analysing public opinion have focused on sentiment analysis, they fail to capture the complexities of narrative structures and their impact on reputation. The gap is further exacerbated by the lack of predictive models that go beyond reactive measures, leaving institutions vulnerable to rapidly evolving public narratives. Furthermore, there is limited research on how artificial intelligence, specifically Neural Narrative Intelligence, can be integrated into public relations strategies to help educational institutions proactively manage and optimise their public image. This research aims to bridge this gap by developing a model that not only analyses public sentiment but also provides insights into evolving narratives, actors, and potential reputational risks, offering a proactive approach to public relations in madrasas.

This research aims to address these shortcomings by developing a Neural Narrative Intelligence (NNI) model. NNI is an artificial intelligence method designed to read, compare, and predict public narrative patterns on social media. This model, based on natural language processing (NLP) and deep neural networks, goes beyond simply calculating sentiment. It also examines the actors involved, the structure of public opinion, and storylines that could lead to reputational crises or opportunities. With its comprehensive analytical capabilities, this model is expected to identify critical narrative points that need to be proactively addressed by PR (Dari et al., 2023). The goal is to ensure that action can be taken before public perception worsens.

Managing public opinion is crucial to maintaining public trust, making this research crucial (Amar, 2024). Shifting from a public relations approach that only responds to problems to a more responsive and anticipatory approach will help madrasas become more adaptable, open, and communicative institutions in facing today's digital communication challenges (Yusuf, 2023). Public relations that can predict the direction of public opinion early on can respond more quickly and accurately while simultaneously developing constructive counter-narratives (Rully Nur Septiana Embisa, Suparman, 2025). These efforts will help maintain the image of madrasas as trustworthy, modern, and able to keep up with the times.

The use of technology-based narrative intelligence can also mitigate reputational losses that have occurred previously due to delays in reading and understanding problems (Ramadhani & Sya, 2025). These efforts will help maintain the image of madrasas as trustworthy, modern, and able up to date. The use of technology-based narrative intelligence can also mitigate reputational losses that have occurred previously due to delays in reading and understanding problems (Ramadhani & Sya, 2025). The innovation of a strategic communication technology model that combines artificial intelligence techniques and narrative reputation management is the main focus of this research. It is hoped that the brain story intelligence model can serve as a scientific and practical tool for madrasah public relations to analyze public opinion predictively and comprehensively. Furthermore, this research adds insight into digital data-based educational public relations, a field that has not been widely studied to date.

The importance of public relations and opinion strategy is public, with the Neural Narrative Intelligence model becoming a trigger for researchers to analyze related drafts, like the research that has been performed by (Nugraha et al., 2022) which explains how known elements and models of government public relations strategy mechanisms in the millennial era. The second researcher performed (Hafizhah Zahro' Rohimah, Abdul Basith, 2025) explains the role of public relations strategy in supporting and participating openness of public information as part of the development of integrity zones. Researchers, furthermore, conducted research by (Haromain, 2023) explain the role of public relations and public opinion management, which is one of the very necessary things to notice in the context of education. Researchers next did by (Syamsu.J1, 2025) explains how to analyze public perception of the program's free lunch through visual narratives on social media. And researchers finally performed (Taryana, 2023) explain how to analyze the role of public relations and public opinion management in the context of Pertamina International EP. Different from the study, this is what aims and confirm that the use of the Neural Narrative Intelligence Model provides a strategic contribution in support of proactive public relations in madrasas. This model not only functions to identify public opinion, but also produces an important outlook narrative for formulating policy more effectively, responsively, and sustainably. The implementation of NNI helps madrasas anticipate issues, take advantage of opportunities for improvement, as well as build positive connections with the public through data-driven decisions.

B. METHOD

This study employs a qualitative-descriptive approach combined with computational communication analysis using the Neural Narrative Intelligence (NNI) model. The research is designed as a case study to allow in-depth exploration of public opinion formation and narrative dynamics within a specific institutional context. The research site is MINU Sunan Ampel 1, Wonorejo Maron, Probolinggo, selected due to its active use of digital media for public communication. Data were collected from digital public interactions, including social media posts, public comments, institutional announcements, and online discussions related to the madrasah. The data were gathered over a defined six-month observation period, ensuring sufficient narrative variation and interaction volume. This case study design is appropriate because it enables an in-depth understanding of

communication practices, contextual dynamics, and reputation management strategies within a real organizational setting.

The Neural Narrative Intelligence (NNI) model was applied through a structured analytical pipeline consisting of three main stages: input, processing, and output. In the input stage, digital texts such as posts, comments, and public responses were collected and cleaned to ensure data relevance. The processing stage employed natural language processing (NLP) techniques and neural network-based pattern recognition to identify narrative structures, dominant themes, actors, sentiment flows, and emerging storylines. In the output stage, the model generated narrative maps and interpretative insights that illustrate how public opinion evolves and which narratives potentially influence institutional reputation. Unlike conventional sentiment analysis, NNI enables a deeper interpretation of narrative dynamics, allowing public relations practitioners to identify early signals of reputational risk or opportunity.

To ensure data validity and analytical rigour, this study employed triangulation by cross-comparing digital data, institutional documentation, and theoretical references on public relations and narrative communication. Findings generated by the NNI model were also compared with manual qualitative interpretation to reduce algorithmic bias. Nevertheless, this study acknowledges the limitations of AI-based analysis, including potential bias in the training data, constraints on algorithmic interpretation, and AI's inability to capture cultural or emotional nuance fully. Ethical considerations were carefully addressed by using only publicly accessible data, anonymizing user identities, and avoiding intrusive data collection practices. Overall, the methodological design supports the study's objective of demonstrating how Neural Narrative Intelligence can strengthen proactive, ethical, and data-driven public relations strategies in madrasah settings.

C. RESULT AND DISCUSSION
Findings
Capturing and Understanding Public Opinion with Neural Narrative Intelligence

The research findings show that the Neural Narrative Intelligence (NNI) model at MINU Sunan Ampel 1 can understand public opinion patterns more deeply than the methods previously applied by the public relations team. The application of NNI not only helps public relations officers understand public opinion patterns but also builds the school's ability to respond quickly, accurately, and data-driven to opinions. This model also identifies frequently discussed issues such as school services, activity information, and achievement appreciation. Previously, these patterns were difficult to detect because the public relations team only focused on individual comments.

The artificial intelligence model used to read narrative patterns in public conversations is called Neural Narrative Intelligence. This model not only calculates word frequency or positive and negative sentiments, but also understands story lines, relationships between topics, dominant emotions, emerging core issues, and changes in public opinion over time. In other words, NNI works like a "story reader" for big data on public opinion on social media, news portals, comments, and communication transcripts. NNI is used by everyone, from public relations practitioners at Islamic schools, public

communication analysts, social researchers, and policymakers who require a deep understanding of public opinion. Applications requiring rapid and in-depth public opinion monitoring are often used when institutions face situations such as emerging issues or polemics concerning the institution, and during public policy evaluations.

The NNI will be implemented by utilizing various public opinion gathering channels, such as the institution's official social media platforms, internal WhatsApp groups, and other digital communication channels used by madrasah residents. This is because it is considered capable of providing a more comprehensive understanding than conventional analysis methods. One reason is that it is not only in the form of sentiment, but also a narrative that has a flow and makes it easier for parents to obtain more detailed information regarding madrasah activities. The NNI stages are carried out through several stages, namely: collecting data, cleaning and normalizing data, identifying narrative patterns, analyzing relationships between topics, producing output in the form of insights, and providing recommendations for communication strategies. Through this process, NNI helps institutions understand not only *what* the public is talking about, but *why* they are talking so and *where* the narrative is going.

Based on public opinion, NNI can organize the narrative structure of the madrasah field. This analysis suggests that public emotions stemming from misinformation and a lack of proactive response to public opinion are common occurrences in the field. For example, questions from parents about madrasah activities, complaints about student disturbances affecting their children, and concerns about student discipline regarding school hours can lead to negative perceptions of the madrasah and its environment. Conversely, posts appreciating student achievements in sub-district or even provincial-level competitions attract public attention and positive public opinion, thus enhancing the madrasah's reputation. This pattern allows the public relations team to easily understand the intent of the conversation, rather than simply viewing comments at face value.

This overall research, conducted at MINU Sunan Ampel 1, states that the NNI model can contribute to a comprehensive and structured narrative picture, so that the public relations team can analyze the direction of their opinion story. Some data can help the public relations team identify the root of the problem and understand how parents think about their experiences. With a deep and clear narrative, the public relations team can make more effective and responsive decisions, because basically the analysis is not just an impression, but a verified opinion pattern.

Table 1. Narrative Analysis Interview Results

Informa	Statement	Code
Public Relations 1	"If only we read comments one by one, what is the important thing? So no visible ."	The issue pattern is difficult to manually monitor.
FB Admin	" After analyzing, it turns out comments about activity info appear. Keep going in the same context ."	Topics dominant repetitive.
Teacher 3	"Parents sometimes comment differently, but the main thing is usually regarding information that has not been clear."	The core of the narrative same, the shape is different.
Parent 4	"We comment because experience previously, not only on the incident day."	The narrative is influenced by experience.
Head of Madrasah	"The results of this model help us see the problem from a side story, not only a complaint."	Analysis-based channel story.

Table 2. Informants at MINU Sunan Ampel 1 confirmed that NNI can help the public relations team understand opinions more thoroughly. Informants explained that NNI is able to identify patterns not yet encountered in parent conversations, such as their concerns and hopes. The interviews revealed that this system can make it easier for teachers and the public relations team to see how problems escalate, allowing the public relations team to find answers by identifying viral issues.

Proactive Early Detection of Issues and Crises

Proactive early detection of issues and crises is the process of identifying potential problems, complaints, negative opinions, or signs of conflict early on, before they develop into crises that are detrimental to the institution. This process involves data monitoring, trend analysis, and understanding changes in public communication patterns. Parties involved in the problem identification process include the public relations team, the primary authority within the madrasah institution, the institution's leadership as the primary decision-makers, the IT team or data managers who operate the digital monitoring system, and external stakeholders such as parents, teachers, the community, and the media, which serve as data sources. Early detection is carried out continuously and consistently, especially during peak academic activity, when there is an increase in comments or complaints related to new and sensitive madrasah policies, and when events occur that have the potential to trigger negative public opinion about the madrasah. Monitoring using the NNI is carried out at various communication points, including the institution's Facebook social media, parent chat groups, the official madrasah website, and offline conversations within the madrasah environment. Monitoring using the NNI can detect crises early and help prevent them from escalating, maintain the institution's positive reputation, reduce the potential for conflict with stakeholders, and support wise

and responsive policy-making within the institution. Early detection measures are carried out by routinely monitoring social media and public conversations, using technology such as Neural narrative intelligence, preparing rapid responses and clarifying communications before the situation worsens, and conducting regular evaluations to identify patterns of issues that frequently arise.

The results of this study explain that the public relations team can more quickly detect issues that are spreading and becoming public topics, both positive and negative, by implementing NNI. The public relations team also explained how, before they implemented NNI, they were slow to understand what issues were in the madrasa field. One of the public relations team said, "Since we implemented NNI, we know better how to understand public opinion and where they are directed. For example, regarding our negligence in responding to parents, whether in terms of questions, criticism, suggestions, or even their appreciation. As a result, those who ask and criticize feel unheard and upset. Likewise, suggestions and appreciation, they feel unappreciated because of our negligence in responding to messages from parents, messages in private chats, chats in groups, or in social media comment columns." Furthermore, one teacher also said, "Usually, we often miss information; suddenly, the WhatsApp group is busy with the state of public opinion. But, since we implemented NNI, we can predict or describe how the story will turn out." All of these research findings can strengthen these findings and can address the issue from the start, before it gets worse or spreads further.
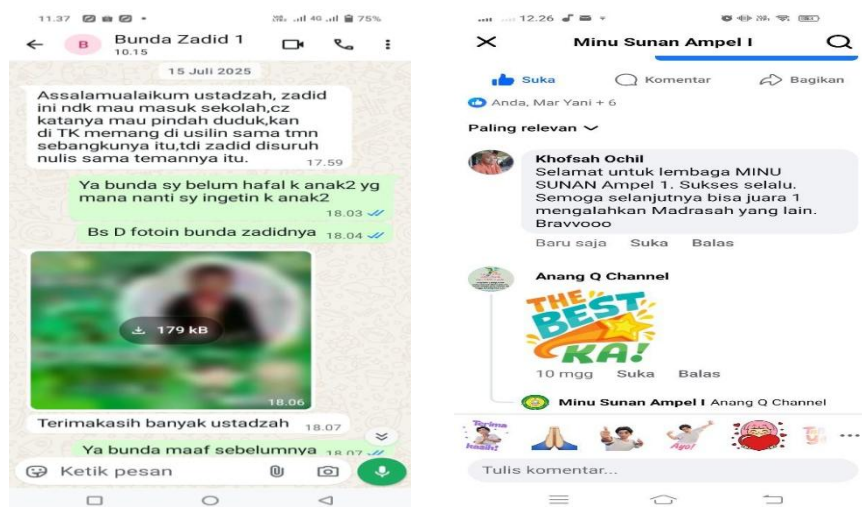

Figure 1. Communication Group and Responses Regarding Achievement Posts

Figure 1. Shows a parent-teacher communication group responding to a social media post about student achievement appreciation. The comments reflect positive responses and support from parents, but also show some communication in the group that is clarifying or questioning, for example, questions regarding the process of selecting students who can participate in competitions and what the requirements are, what categories the competitions fall into and what the criteria should be, and the mechanism for reporting achievements. Such communication demonstrates how the narrative pattern is that each achievement appreciation post is not only informative, but also

provides a place for parents to express their hopes. By posting achievement appreciation, the madrasah can strengthen its reputation and communication, which needs to be managed by public relations.

Effective Communication Strategy in Madrasah Environment Based on Neural Narrative Intelligence

The results of this study demonstrate how the use of Neural Narrative Intelligence (NNI) provides valid data for mapping effective communication strategies. Based on these observations, the NNI dashboard provides insights into the system's results, which can display communication strategies and dominant issues. This allows the public relations team to work with clear information, enabling communication strategies to achieve a data-driven direction.
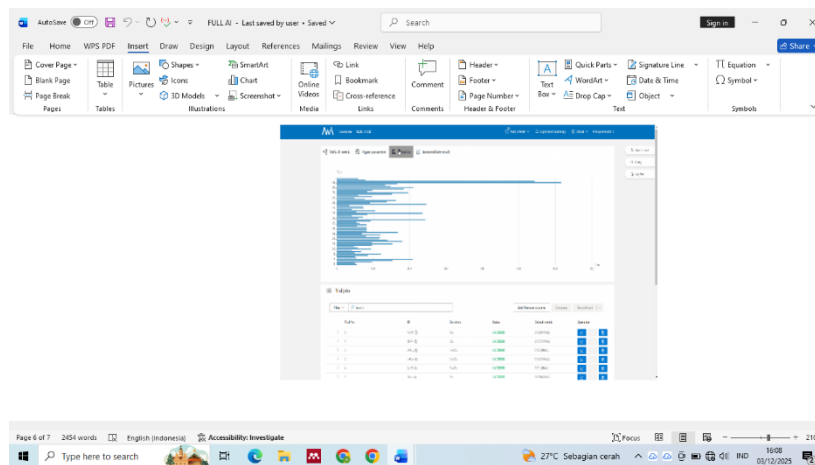

Figure 2. Neural Narrative Intelligence experiment analysis dashboard

Figure 2. A Neural Narrative Intelligence-based system analysis dashboard showing model experiments. This dashboard displays clear and comprehensive information. The top section of the dashboard displays the experiments and the number of experiments that have been run, while the bottom section depicts trials in the form of varying dots (scatter plots). This overall image illustrates how the model is systematically implemented and monitored through a structured dashboard.

An effective communication strategy based on NNI helps public relations make more precise, faster, and data-based communication decisions involving the Madrasah Public Relations Team, Madrasah Principals, Teachers and Education Personnel, Parents, and students. NNI implements the strategy periodically and whenever necessary to find out the evaluation of public relations communication through digital social media platforms such as WhatsApp and Facebook, which aims to help madrasahs understand public opinion more deeply and comprehensively and strengthen the relationship of trust between madrasahs and stakeholders.

Several records of communication decisions based on the NNI can reduce the number of questions in communication groups and improve parents' understanding of

madrasah policies. Observations show how public relations can map frequently occurring issues in the field within a specific timeframe, such as administrative constraints and information on decisions related to annual activities. Using the NNI not only allows for quick and accurate renponses but also form the basis for more effective communication planning, whwrw thw public relations can play a key role in creating proactive communication.

Discussion

Public opinion has become a key reference point in the development of this digital era, and the role of public relations and digital media is crucial and crucial to consider because it affects the reputation of madrasas. This situation forces public relations to be proactive in various conversations and comments on social media to understand and respond quickly and accurately to public opinion, as this is one of the biggest challenges for madrasas today. If public relations is not proactive in reading and understanding public opinion patterns, it will lead to a crisis of public trust regarding actual public opinion on the ground and a decline in the reputation of madrasas. This communication phenomenon demonstrates that policy in this digital era is no longer determined by vertical communication, but rather by horizontal processes between citizens, madrasas, and citizens in cyberspace. Therefore, public relations must be able to maintain, understand, and respond to public opinion patterns to maintain public trust and the reputation built by madrasas. The formation of public opinion no longer relies solely on direct interactions but also on social media, official digital channels, and online community conversations. The dynamics of the narratives that emerge, whether religious, social, or cultural, as well as the strong influence of community beliefs, make madrasas an appropriate context for analysis using the Neural Narrative Intelligence (NNI) Model.

The previous method of reading and understanding public opinion already no longer accurate in the current digital era, so public relations does not fully understand the true meaning happening in society. With that, public relations is very necessary to look for patterns newer effectively, so that we can understand public opinion with good. The role of public relations in shaping public opinion builds and maintains the development of madrasas. Public relations is necessary to cooperate with utilizing social media to create a network for more communication, so that it has a greater impact big in influences public opinion. Developing strategies with a proactive, effective environment as guidelines in carrying out connections with society is one of them. Can strengthen trust community in madrasas (Panisa Chaowichitra, Chanuan Uakarn, 2023), Public Relations also has a central role in pattern public opinion. For managing internal and external communications, ensuring public opinion as well as responding issues public issues with good judgment and right. A proactive school can make a change in a positive way, significantly with Keep going, evaluate things that need to be done and repaired (Kanyakorn Sujarittnetikarn, 2024). A strong reputation of the madrasah both in the environment and the wider community can be a place that is supported to achieve goals effectively, because all parties can work together with full trust and a sense of responsibility (Ataman et al., 2025)

There are some runway-related theories in this article, namely: first, communication organization. This includes a number of draft-like communications,

external and internal communications, role communication in organizations, and social media influence through proactive communication. Second, digital communication and social media. This includes a number of aspects of utilization of digital media, involvement, as well as social media influence in forming and maintaining the reputation of schools in public opinion. Third, management opinion is public. Discussing how organizations manage perceptions, thoughts, and opinions public about them, as well as how social media has an impact on agenda-setting and highlighting aspects of public opinion.

Neural Narrative Intelligence (NNI) intelligence an artificial form that is formed in order to understand channel communication from public opinion. NNI is trying to understand the meaning of the pattern opinion related to the public with current topics discussed, what society feels, and what problems are being discussed, as well as understanding the development of public opinion over time. With that, NNI is capable of giving a view of how the public responds to something opinion, or an issue. NNI is not only a tool for communication, but also a means of producing and composing as well as an accurate answer in response to public opinion (Sana Azeem, Sadia Sharif, 2025). Researchers explore NNI's contribution with a focus on three key areas: organizational, technical, and technological. The researchers also recommend merging artificial intelligence with sustainable development in strategic adjustment, infrastructure formation, management change, as well as continuous evaluation, with the hope that madrasas can utilise potential artificial intelligence in order to achieve positive social results (Liudmyla Mialkovska, Volodymyr Hrysiuk, 2024). Analyzing digital communication strategies can also provide a chance to increase credibility in the social media era (Saputri et al., 2025).

Managing public opinion needs concentration and patience with a continuous process, because all stakeholders are involved, it is necessary time understand needs as well as public opinion, with keep going, increase service good both online and offline (Abdullah, 2024). AI technology reads with understands some types of information, one of them social media posts, good at writing or content, comments, and hot issues debated. With information like that, AI will look for how patterns of opinion frequently become topics example, in the form of opinions and hopes, society in the form of support, or on the contrary. AI will examine the development of public opinion every time. After public opinion is processed, the topic will be found topic what become issues, patterns, opinions public which way, and how, if at any time, opinion of public opinion changes. Currently, public relations at the madrasah acts for revitalization and transformation because that is part of the bureaucratic reform of madrasah governance. From that, the existence of AI will manage data, continue with analyzing patterns in public opinion, and finally give a general view how public opinion.

Public relations strategies implemented using a structured process, like mapping data needs or information, governance preparation service, public, have appropriate communication media to monitor and evaluate. From the AI patterns found, public relations is beginning to see if it takes a notification problem or obstacles that arise. With that, public relations will take a step before public opinion spreads a vast and growing level of the problem. With analysis, this can help public relations create communication in the form of an appropriate message to opinion public. The analysis also summarizes a number of methods related to classification, segmentation, and detection, as well as building the reputation of madrasas (Xiangli, Minglei Li, 2023). On

the side, otherwise, AI will display Who perpetrator or influential accounts in public communication, so that public relations knows who the message will be delivered to with wisdom and effectiveness. Analysis results can make public relations work and be more strategic, precise, and fast. Likewise with communication should be transparent and honest as well as proactive, which is a key element in building a trust community, maintaining and improving the madrasa's reputation (Yunandar et al., 2024). Madrasas that have a reputation will be more easily accepted by potential consumers, because consumers have the experience and knowledge to be more selective in choosing (Noviana, 2022).

From the whole study, this explains that Neural Narrative Intelligence has a great influence on public relations in order to understand public opinion in a good and proactive way. Therefore, we recommend that researchers furthermore do similar analyses in various public sectors and compare various methods to help disclose facts in the field (Saxena & Moon, 2023). This model also has a side weakness or lack, like results from matter, which are not objective enough and are not accurate. Furthermore, generation can use features like a dashboard, real-time, or a system that predicts how influential a potential crisis. Social media is very useful only necessary and always needs to be evaluated.

D. CONCLUSION

This research demonstrates that the Neural Narrative Intelligence (NNI) model plays a critical role in enhancing proactive public relations strategies for madrasas, enabling them to effectively manage and respond to public opinion both online and offline. By identifying key narrative structures and understanding the evolution of public sentiment, NNI facilitates the formulation of more responsive, effective, and sustainable communication policies. The application of NNI in this context contributes to the theoretical understanding of public opinion management by integrating artificial intelligence with narrative analysis, offering new insights into how educational institutions can optimise their public relations strategies in the digital era.

The use of social media is a crucial component of the public relations strategy, enabling madrasas to engage with the public in a more personal, transparent, and interactive manner. This allows them to build and maintain a positive reputation, strengthen relationships with stakeholders, and sustain public trust. However, the study acknowledges several limitations, including potential biases inherent to AI algorithms and limited data scope, which may affect the generalizability of the findings. Future research could expand the NNI model's application to other educational institutions and explore its effectiveness across different digital platforms and cultural contexts, thereby further refining the tools and methodologies for public opinion management in the digital age.

REFERENCES

Abdullah, J. M. (2024). Digital communication strategy in shaping public opinion to support the brand image of Madrasah Aliyah Nurul Jadid. *JIIP: Scientific Journal of Educational Sciences, 7*(2), 1571–1578.

Agus, A. H. (2023). Method of communications of Islamic educational institutions in building branding image: Symbolic interaction studies. *Managere, 5*(3), 280–293.

Alamsyah, I. L., Aulya, N., Satriya, S. H., & Islam. (2024). Media transformation and communication dynamics in the digital era: Challenges and opportunities for communication science. *Scientific Journal of Research Student, 1*(3), 168–181.

Amar, M. F. (2024). Strategies of educational institutions in increasing public trust. *Journal of Islamic Educational Management, 1*(2), 68–83.

Ataman, A., Sanjani, M. A. F., & Safitri, S. D. (2025). Exploring complementary leadership styles in madrasahs by aiming at their impact on integrity and character development. *Business and Applied Management Journal, 01*(02), 118–133.

Dari, S. W., Putra, V. P., & Hasri, S. (2023). Leadership dynamics in organizations: A comprehensive analysis of typology, style, and leadership roles in improving organizational sustainability. *Didaktika: Jurnal Kependidikan, 12*(4), 935–946.

Gema Irhamdhika, N. I. E. H., & Y. A. (2025). Public trust crisis: The Kaburajadulu phenomenon and the role of government public relations in responding to cancel culture. *Journal of Public Relations-JPR, 6*(1), 7–15.

Hafizhah Zahro' Rohimah, A. B., & M. A. N. (2025). Public relations strategy in realizing public transparency towards madrasahs with integrity zones. *JIIP: Scientific Journal of Educational Sciences, 8*(7), 7301–7307.

Harditia, S. (2025). Public relations management strategy in building school reputation in the public eye. *AL-MARSUS: Journal of Islamic Education Management, 3*(1).

Haromain, M. (2023). The role of public relations and public opinion management at Al Binaa Islamic Boarding School Junior and Senior High Schools. *Innovative Research Journal (JUPIN), 3*(3), 545–552.

Kanyakorn Sujarittnetikarn, S. K. (2024). A proactive public relations model through social media to improve the image of the Faculty of Management Sciences at Suan Sunandha Rajabhat University. *189–194.*

Khoiroh, U., Hani, U., Baharun, H., Iman, D. Z., & Jadid, U. N. (2025). Public policy analysis: How mutual public relations support equitable access to education. *JIM: Jurnal Ilmu Multidisipol, 1*(2), 1–11.

Kurnia, D., & Ridwan, A. (2024). Social studies in madrasah diniyah education at the crossroads of the times: A social analysis of declining interest in the contemporary era. *Social Studies in Education, 02*(02), 93–106.

Laksana, B. I., & Putri, A. (2024). Social media viralization as a response accelerator. *Scientific Journal of the Indonesian Red Cross Study Program, 9*(1), 1–23.

Liudmyla Mialkovska, V. H., & L. Z. (2024). Leveraging media and public relations strategies to advance sustainable development: Approaches, frameworks, and tactics in modern conditions. *7*(3), 253–269.

Nawar, M. F. (2024). A qualitative analysis of the "Blue Garuda Emergency Warning" phenomenon: Understanding the role of framing and emotional resonance in shaping public opinion. *Komunikatif: Journal of Communication Studies, 13*(2), 235–250. https://doi.org/10.33508/jk.v13i2.6144

Noviana, R. L. (2022). Quality improvement as a strategy to build Islamic boarding schools' brand credibility. *Al-Ishlah Journal of Education, 14*(1), 529–538. https://doi.org/10.35445/alishlah.v14i1.1583

Nugraha, A. R., Sjoraida, D. F., & Novianti, E. (2022). Analysis of government public relations strategies in the millennial era in dealing with public information governance. *Public Relations Profession, 6*(2), 286–310.

Panisa Chaowichitra, C. U., & N. S. (2023). Development of proactive public relations strategies. *Public Relations, 17*(54), 168–185.

Putri, D. (2025). Transformation of public relations practices in the digital era: A descriptive study of professional adaptation of public relations professionals. *Scientific Journal of Communication Studies, 4*(2), 47–71.

Ramadhani, A. D., & Sya, M. F. (2025). Content analysis of game-based learning modules: Utilizing AI Zep Quiz media to improve narrative text comprehension. *Karimah Tauhid, 4*(9), 6980–6990.

Rully Nur Septiana Embisa, S., & S. R. (2025). Public relations strategy through optimizing PT Pelabuhan Indonesia (PELINDO) social media accounts in building a positive image. *J-CEKI: Jurnal Cendekia Ilmiah, 4*(2), 782–790.

Sain, Z. H., Thelma, C. C., & Cryssandra, A. (2024). ChatGPT for positive impact? Examining the opportunities and challenges of large language models in education. *International Journal of Educational Development, 1*(3).

Sana Azeem, S. Sharif, & M. Z. ul H. (2025). AI narrative critique: Reimagining meaning, power, and storytelling in the algorithmic era. *3*.

Saputri, I. D., Oktarinah, A., Suhanda, F. N., & Riska, A. F. (2025). Analysis of BAZNAS's digital public relations communication strategy in cultivating credibility in the social media era. *Jurnal Penelitian Multidisiplin Bangsa, 2*(1), 126–132.

Sarasati, F., Ramadhan, H., Sianipar, H., & Wahyuti, T. (2025). Communication accommodation and early warning system (EWS) model recommendations in cases of ethnicity-based hate speech on social media. *Jurnal Publik Relations-JPR, 6*(1), 1–6.

Saxena, D., & Moon, E. S. (2023). Rethinking "risk" in algorithmic systems through a computational narrative analysis of case notes in child welfare. *April,* 23–28.

Syamsu, J1. (2025). From visual narrative to policy legitimacy: Public perceptions of the free lunch program on social media. *RIGGS: Journal of Artificial Intelligence and Digital Business, 4*(3), 7586–7596.

Taryana, A. (2023). The role of public relations, digital media, and public opinion management at Pertamina International EP. *Journal of Innovative Research (JUPIN), 3*(2), 403–414.

Xiangli, M., Li, P. Y. (2023). Deep learning attention mechanism in medical image analysis: Basics and beyond.

Yunandar, F., Aji, J. F., Wibisono, W., & Purwanto, E. (2024). Public communication strategy in waste management campaigns. *INTERACTION: Communication Studies Journal, 1*(4), 1–20.

Yusuf, M. (2023). Rebranding madrasahs to build a positive and modern image. *Journal of Education Management Research, 1*(2), 65–82.

Zuniananta, L. E. (2021). The use of social media as a medium for information communication in libraries. *Journal of Library Science, 10*(4), 37–42.