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DYNAMICS OF ORGANIZATIONAL COMMUNICATION IN URBAN INFRASTRUCTURE OF MEDAN CITY GOVERNMENT: DEVELOPMENT IMPLICATIONS IN THE FRAMEWORK OF MODERNIZATION AND EQUALITY OF ACCESS

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Abstract
This study aims to explore the dynamics of organizational communication in the management of urban infrastructure projects in Medan City, focusing on how communication between institutions and with the community affects the success of infrastructure development. The urgency of this research arises from the need to address complex urban problems such as congestion and flooding, as well as support sustainable and inclusive city modernization efforts. The methodology used in this study is qualitative with a descriptive approach, where primary data is collected through archives and official documents published by the Medan City Government, including details of project implementation and progress reports. Secondary data involves relevant literature studies to strengthen the analysis of organizational communication dynamics. Data analysis was carried out using the Miles, Huberman, and Saldana model which includes data collection, condensation, display, and drawing conclusions from data. The results of the study indicate that the effectiveness of organizational communication plays a critical role in ensuring the success of infrastructure projects, especially in supporting equal access and encouraging modernization. Projects such as the Mebidang Bus Rapid Transit (BRT) and the construction of the Jalan Gatot Subroto underpass not only improve mobility but also open wider access to city services, contributing to a more equitable distribution of development benefits. In the discussion, this study suggests the importance of strengthening communication structures and adopting new communication technologies to improve transparency and responsiveness in project management. Recommendations include conducting further studies with direct interviews with stakeholders to gain deeper insights into internal and external communication in infrastructure projects, as well as exploring the influence of new communication technologies in improving the effectiveness of project management in other developing cities.

Keywords: *Orgnanizational Communucation, Urban Infrastructure, Modernization, Equality of Access*

INTRODUCTION

In an effort to modernize and improve equality of access, the Medan City Government has initiated various major infrastructure projects, including the launch of the Medan Binjai Deliserdang Bus Rapid Transit (BRT) which is planned to involve the operation of 468 buses

spread across 15 corridors (Pemko Medan, 2023). This project is one of the main pillars in the urbanization strategy that aims to improve mobility and accessibility in the city (Joshi et al., 2021; Patil et al., 2020) . This development not only changes the transportation landscape but also redefines the interaction between public space and citizen mobility.

In addition, there are also various drainage channel development projects that aim to overcome flooding problems and improve the quality of the community's living environment. The drainage channel projects in Gang Markisa and on Jalan Ikahi are examples of government efforts to overcome infrastructure problems that are crucial to the welfare of residents (Pemko Medan, 2023). This initiative demonstrates the government's commitment to providing infrastructure that is not only functional but also sustainable.

The success of these infrastructure projects does not only depend on physical construction, but also on the dynamics of effective organizational communication between various government entities and related institutions. Good communication between the Water Resources, Highways and Construction Services with Medan residents is key to gaining community support and participation in every phase of the project. Handling this communication includes aspects of providing transparent and open information, as well as fulfilling the community's need for accurate and timely information. (Plutchak, 2021; Roundtree et al., 2019) .

The construction of the Jalan Gatot Subroto underpass, scheduled for completion in 2024, demonstrates the scale and ambition of the government in addressing future urban challenges. However, the project also illustrates the complexity of interactions between stakeholders and the importance of managing expectations through strategic organizational communication. Infrastructure projects such as these often require adaptation and modification of plans based on input from the various parties involved (Ndayishimiye et al., 2022; Palin et al., 2021) .

Effective communication and close coordination between government departments and between the government and its citizens are essential. Integrated communication between agencies can facilitate faster decision-making that is responsive to community needs, and increase efficiency in project management (Gabrys, 2022) . This process also strengthens the foundation for more inclusive and participatory sustainable development.

Collaboration between institutions and with the community is key to managing large-scale infrastructure projects in Medan City. This is important, considering that Medan often experiences problems such as flooding and traffic congestion that require effective and fast infrastructure solutions. The Medan City Government, in responding to this problem, has taken strategic steps by improving the drainage system and expanding the public transportation network through the Mebidang BRT project. Infrastructure development in Medan is not only aimed at improving the physical condition of the city but also as part of a broader modernization effort. This modernization is expected to encourage economic growth and improve the quality of life for its citizens. With better infrastructure, it is also expected to reduce inequality in access to public services and facilities (Kuznetsov et al., 2023; Zou & Di, 2023) .

The impacts of infrastructure development on local communities are often complex. Effective communication is therefore essential to ensure that all parties, especially affected communities, understand the benefits and challenges of ongoing projects. It also helps in managing expectations and responding to concerns or feedback from city residents.

Flood and congestion management through these infrastructure projects must also be clearly communicated as an effort by the government to maintain the safety and comfort of its

citizens. Drainage projects that have been completed at several points in the city demonstrate this commitment, but disseminating information about their sustainability and effectiveness requires a more organized and integrated communication strategy (Nurokhman et al., 2023) .

In order to support sustainable modernization, an approach that integrates technology, innovation, and collaboration between institutions is needed. The strength of organizational and public communication will determine how successful this integration is in facing future urban challenges and ensuring that infrastructure development has a positive and sustainable impact on all citizens of Medan City.

This study examines the role of organizational communication dynamics in supporting urban infrastructure development by the Medan City Government, and assesses its implications for achieving the goals of modernization and increasing equal access for the community. In this context, this study reveals how effective communication between different government organizations can influence the success of infrastructure projects and facilitate the spread of innovations and best practices in city management and operations. This approach is important in ensuring that the development process not only meets technical standards, but also supports broader social sustainability and inclusiveness.

The diffusion of innovation theory is used to understand how innovations in organizational communication techniques and strategies spread and are adopted in the public sector, and to select relevant organizational communication theories to dig deeper into the internal mechanisms that influence inter-agency interaction and coordination in large infrastructure projects. At this level, the author collects several relevant previous studies to be compared critically as follows:

Aiyetan and Das (2021) conducted an evaluation of the factors and strategies that influence the delivery of water infrastructure projects in South Africa using a quantitative approach to collect data. Their research results show that risk management and stakeholder engagement are key factors that influence project success. The difference with this article lies in the geographical and sectoral focus, where this article focuses more on the organizational communication aspect in urban infrastructure projects in Indonesia, not only on the success factors of water infrastructure projects.

Belay et al. (2021) explored the implementation of Building Information Modeling (BIM) in the Ethiopian public construction sector through a survey involving industry professionals. They found that lack of awareness and adequate training were major barriers to BIM adoption. In the context of this article, although both studies are about infrastructure, this article does not focus on a specific technology such as BIM, but rather on the dynamics of organizational communication and the social impact of infrastructure in Medan.

Eliwa, Jelodar, and Poshdar (2022) investigated the use of Information and Communication Technology (ICT) in construction organizations to ensure alignment between ICT and infrastructure. They used qualitative methods to understand managerial perceptions of ICT. Their findings emphasized the importance of ICT in improving operational efficiency. This article, meanwhile, takes a broader perspective by examining how organizational communication can influence overall infrastructure success, not just through the use of technology.

Waris et al. (2022) examined stakeholder management in public sector infrastructure projects using a case study to detail effective management strategies. Their results suggest that proactive and transparent communication with stakeholders can minimize conflict and enhance project success. Unlike this article, Waris et al.'s study focuses more on specific stakeholder

management strategies, while this article investigates how inter-organizational communication in a broader context contributes to the achievement of urban development goals in Medan, highlighting the role of communication in addressing specific challenges such as flooding and congestion.

This study urges to explore how the dynamics of organizational communication in infrastructure projects in Medan have implications for the success of urban development, with a focus on achieving modernization and equal access for all levels of society. Through this approach, it is expected to identify factors that support or hinder the effectiveness of communication in the scope of urban infrastructure development. A holistic and integrative approach to managing infrastructure communication is needed to address the complexity of today's urban challenges. This mechanism is important to ensure that all elements of society feel involved and benefit from the projects being implemented. An inclusive and participatory communication strategy will support the achievement of more effective and sustainable results.

RESEARCH METHOD

This study uses a qualitative methodology with a descriptive approach to analyze the dynamics of organizational communication in urban infrastructure projects in Medan City (Edmonds & Kennedy, 2020; Weyant, 2022) . This approach was chosen because of its ability to explore it in real contexts and the complexity of communication phenomena in large infrastructure projects. Primary data were collected through archives and articles published by the Medan City Government, which included details of project implementation, progress reports, and official communications between departments. Secondary data sources involved literature studies relevant to the research topic, including academic publications, research reports, and related policy documents (Creswell & Creswell, 2022) .

Data collection techniques in this study include observation and documentation. Observations were carried out indirectly through in-depth analysis of the content contained in documents and archives related to organizational communication activities in infrastructure projects (Johannesson & Perjons, 2021) . Documentation involves collecting, organizing, and analyzing relevant documents to gain a comprehensive understanding of the process and results of organizational communication. This approach allows researchers to explore information systematically and in an organized manner, providing a strong foundation for further analysis.

Data analysis was conducted using the Miles, Huberman, and Saldana model, which includes four main stages: data collection, data condensation, data display, and drawing conclusions (Miles et al., 2020) . The data collection stage involves identifying and collecting information related to organizational communication from the various sources mentioned. Data condensation involves the process of simplifying, abstracting, and transforming raw data into a more concise form. Data display is done by arranging the condensed information into a format that facilitates analysis and interpretation. Finally, conclusions are drawn based on the information presented in the data display. Data validity testing using source triangulation, which involves comparing and confirming findings through various data sources, strengthens the reliability and validity of the study (Flick, 2022).

RESULT AND DISCUSSION

Medan City Government Organizational Communication Model in Infrastructure Development

In the effort of sustainable and effective infrastructure development, the organizational communication model implemented by the Medan City Government plays a critical role. This model not only focuses on efficient information exchange between various government entities, but also involves the community as the main stakeholder in the development process. This sub-chapter will explore more deeply how the Medan City Government uses communication strategies to facilitate project management and increase public participation in infrastructure development. This study is important to understand the dynamics between organizational communication and infrastructure project implementation, as well as its impact on project success and community satisfaction. The following are the results of the author's observations collected from several existing websites regarding the communication model in Medan City infrastructure development:

In the context of infrastructure management in Medan City, the Medan City Government plays a crucial role as the main policy maker and supervisor. As the main entity, the city government is responsible for conveying relevant policies and collecting feedback from Regional Apparatus Organizations (OPD) and the community. This reflects a communication model that aims to ensure that each infrastructure project not only meets the established standards but also supports post-pandemic economic recovery efforts. This activity is vital to maintain the involvement of all parties and ensure that the project runs according to plan (Bulu et al., 2023) .

The Water Resources, Highways, and Construction Services Department acts as the technical implementer and field coordinator. This OPD manages infrastructure projects directly, facilitating communication between contractors, other OPDs, and the community. In its capacity, this agency ensures that all technical and operational aspects of infrastructure projects are managed efficiently, supports effective coordination, and oversees project implementation to ensure quality and timeliness. Effective communication in this scope is essential to achieve synergy between various work units and stakeholders.

Communities, as the primary beneficiaries of any infrastructure project, have a critical role in providing input and participating in public consultations. The communication model used here is designed to enhance transparency and accountability, allowing communities to voice concerns and suggestions that help ensure the project meets their needs and expectations. This proves that two-way communication between the government and the community is not just a formal ritual but an integral part of the decision-making process in infrastructure management.

Contractors and suppliers, as project implementers, communicate intensively with related OPDs to discuss technical specifications and project requirements. This communication activity is essential to provide accurate technical input and ensure that all materials and services are delivered according to the established schedule. This communication model facilitates the rapid and efficient exchange of information, which is vital in the dynamics of construction projects that are often complex and urgent (Colazo, 2021) .

The communication model adopted by the Medan City Government reflects an integrated system that allows for multi-directional information flow between the various entities involved. This not only optimizes project management but also strengthens the

relationship between the government and the community, and ensures compliance with applicable standards and regulations. The success of this model is highly dependent on openness, clarity, and speed in communication.

Critically, this communication model demonstrates a structured yet flexible approach, allowing for adaptation to changing conditions and inputs received throughout the project lifecycle. This approach strategically supports the city's efforts to address existing infrastructure challenges while pursuing long-term development goals. It also highlights the importance of the active role of the community in the development process, not only as beneficiaries but also as monitors and providers of valuable inputs.

In the final analysis, the communication model between the Medan City Government, the Water Resources Agency, Bina Marga and Bina Konstruksi, contractors, and the community illustrates a dynamic collaborative ecosystem (Sassanelli & Terzi, 2022; Townsend et al., 2019) . This is an important prerequisite to ensure that infrastructure projects are not only successfully implemented but also sustainable and beneficial to all levels of society in Medan City. This model, therefore, serves not only as an operational framework but also as a tool for community empowerment and improving the quality of life.

In the context of innovation diffusion theory, the communication model adopted by the Medan City Government shows how innovations in infrastructure project management can spread widely and be accepted in government and community practices. This diffusion is not limited to the application of new technologies alone but also to the adoption of communication methods that strengthen cooperation between the public and private sectors and between government and citizens. Key elements of this theory, such as innovators, early communicators, early majority, late majority, and laggards, all play a role in how information about best practices and project successes is disseminated and how feedback from beneficiaries shapes subsequent iterations of project practices (Rogers et al., 2019) . The application of this theory in the context of Medan City shows that the success of innovation diffusion is highly dependent on the effectiveness of communication between various stakeholders.

Organizational communication theory provides another relevant framework for understanding interactions in infrastructure project management in Medan City. An effective communication model, characterized by open and regular communication channels, facilitates better information exchange and coordination between departments and stakeholders (Luoma-Aho & Badham, 2023; Mahoney, 2023) . This theory emphasizes the importance of good communication structures in improving organizational performance and achieving synergy in joint efforts. In Medan, the application of this theory can be seen in how the Water Resources, Highways and Construction Departments manage projects and communicate with contractors and the community to ensure that all aspects of the project are clearly communicated, and that community input is integrated into project planning and execution. This helps to create an environment that is more inclusive and responsive to local needs and challenges, which ultimately strengthens public trust and engagement in government projects.

Urban Infrastructure Development in Modernization and Equality of Access in the Communicative Landscape

Urban infrastructure development is one of the main pillars in supporting modernization and increasing equality of access in developing cities such as Medan. This sub-chapter will examine how effective communication plays a role in ensuring that infrastructure projects not only follow the trend of modernization but also provide equal benefits to all levels

of society. With a focus on communicative interactions between government, contractors, and the community, this discussion aims to assess the impact of communication strategies used in the management and implementation of infrastructure projects.

Infrastructure development in Medan City has adopted various strategic projects aimed at modernization and improving the quality of life of the community. One of the key projects is the development of the Mebidang Bus Rapid Transit (BRT), which involves the construction of 15 corridors and 468 buses. The main objective of this project is to facilitate fast and efficient mobility, as an effort to support the modernization of the city. The communication strategies implemented include dissemination of information through social media, information boards, and community meetings, designed to keep the general public, local entrepreneurs, and government stakeholders informed and involved in the development process (Broo & Schooling, 2023) .

In addition, Medan also faces significant challenges related to water management, especially in overcoming waterlogging. In this effort, the Medan City Government has taken steps to improve and build drainage channels in locations such as Gang Markisa and Jalan Ikahi. These projects not only aim to prevent flooding but also to improve the quality of life of residents by eliminating risks associated with waterlogging. Communication regarding the progress of the project is delivered through the website and local media, ensuring that local residents, environmental NGOs, and related agencies receive timely and accurate information.

The underpass construction project on Jalan Gatot Subroto is also an important part of the city's infrastructure development agenda. Targeted for completion in 2024, the 750-meter underpass is designed to support seamless access and mobility and reduce congestion on one of the city's main arteries. The communication strategy for the project includes public discussions, project exhibitions, and Q&A sessions with developers and government, aimed at ensuring transparency and increasing public participation. Stakeholders involved include road users, surrounding traders, and infrastructure developers, all of whom have a direct interest in the outcome of the project.

On the other hand, the concreting of Jalan Kawat III and the repair of Jalan Pintu Air IV highlight the city's commitment to improving road infrastructure. These activities aim to provide safe and reliable roads, which are vital for the safety and comfort of road users. Communication on the progress and status of these projects is delivered through a smart city application, making it easy for local residents, schools, and local businesses to access up-to-date and relevant information. This strategy supports the continuity of road functions and minimizes disruption during the construction process.

Overall, the infrastructure development efforts in Medan City show a holistic approach that not only focuses on physical development but also pays attention to aspects of communication and community involvement. This shows an understanding that the success of infrastructure projects depends not only on technical implementation but also on the support and active participation of the community and all stakeholders. Through effective communication and engagement strategies, Medan is moving forward not only to become a more modern city but also a city that is more inclusive and responsive to the needs of its citizens. The application of innovation diffusion theory in the context of infrastructure development in Medan City is an important aspect in understanding how new technologies and management methods can be accepted and adopted by the community and government agencies (Lundberg et al., 2019) . The Mebidang BRT project, for example, not only introduces a new transportation system but also introduces the concept of more sustainable and efficient mobility into urban

society. According to the innovation diffusion theory, the success of the spread of this innovation is highly dependent on effective communication that is able to explain the benefits and practicality of the innovation to the wider community. Therefore, the communication strategy used by the Medan City Government through various media aims to facilitate the acceptance and adoption of this new transportation technology by the early majority and the late majority in the adoption curve.

Furthermore, organizational communication theory provides insight into the importance of communication structures and processes in supporting the implementation and operation of large infrastructure projects (Luoma-Aho & Badham, 2023; Mahoney, 2023) . In the context of the Jalan Gatot Subroto underpass project and drainage systems at various locations, communication between departments and with contractors plays a critical role in ensuring that the project runs on schedule and according to the established specifications. This theory emphasizes that clear and effective communication channels between various levels of the organization and stakeholders are key to overcoming obstacles and optimizing resources. By applying the principles of organizational communication, the Medan City Government seeks to improve coordination, reduce miscommunication, and ultimately increase efficiency and effectiveness in managing infrastructure projects.

DISCUSSION

The dynamics of organizational communication in infrastructure projects in Medan City show the importance of structured and effective communication in supporting the success of urban development (El-Bouayady & Radoine, 2023) . From this study, it can be seen that infrastructure development requires not only physical investment but also a communicative approach that ensures community participation and support. Effective communication helps in conveying transparent information about project progress, which in turn increases public trust and facilitates the adoption of new technologies and processes (El-Bouayady & Radoine, 2023).

Projects such as the Mebidang BRT and the construction of the Jalan Gatot Subroto underpass are concrete examples of how modern infrastructure can be integrated into urban settings with an approach that takes into account social and technological aspects. In this case, the theory of diffusion of innovation is relevant in explaining how innovations in management and technology can be widely accepted by the community through effective communication strategies (Al-Mannaei et al., 2023; Phillips & Lindquist, 2023; Trischler et al., 2020) . The timely and accurate dissemination of information allows the community to understand and support development initiatives which ultimately contributes to the effectiveness and sustainability of the project.

Furthermore, the implementation of infrastructure projects is often faced with technical and social challenges. For example, a drainage project aimed at addressing flooding problems in Medan requires not only appropriate technical solutions but also effective communication to the affected communities. In this context, organizational communication theory provides insight into how various government agencies can coordinate and communicate effectively to address these challenges (Mahoney, 2023) . This includes how feedback from the community can be integrated into project planning and implementation to ensure that the solutions presented are not only effective but also accepted by the community.

Two-way communication between the government and the community also plays a vital role in ensuring the success of infrastructure development (Ul Hassan et al., 2022) . This is especially important in the Medan context where urban challenges such as congestion and

flooding require active community participation in the planning and decision-making process. Through public discussions, project exhibitions, and the use of social media, the Medan City Government has been able to build a productive dialogue with the community, allowing for the exchange of ideas and opinions that help refine the project.

In terms of technology, the use of smart city apps to deliver updates on infrastructure projects shows how digitalization can be leveraged to improve communication efficiency (Pradhan et al., 2018; Vedantham et al., 2022; Zhang & Wei, 2024) . These apps not only make it easier for citizens to get the latest information, but also allow governments to collect data and feedback from users in real-time, which can be used to improve decision-making and project management.

However, there are also challenges in implementing an effective communication model in a complex urban environment like Medan. These challenges include the heterogeneity of society, resistance to change, and limited communication infrastructure in some areas. To overcome these, strategies are needed that are not only technical but also sensitive to the local social and cultural context.

In summary, the dynamics of communication in urban infrastructure projects in Medan City show how a combination of modern technology, community participation, and effective communication strategies can bring together various important elements to ensure the success of development. This approach not only optimizes project outcomes but also strengthens social cohesion and improves the quality of life of urban communities.

The novelty offered in this study is a dynamic adaptive communication model, which integrates digital technology with participatory communication strategies. This model offers a framework for managing infrastructure projects that rely not only on advanced technology but also on the ability to adapt to the needs and expectations of the community. This model aims to strengthen the synergy between government, private sector, and community, making Medan an example of a city that is not only smart in terms of technology but also inclusive and sustainable in urban development.

CONCLUSION

From the above explanation, it can be concluded that the effectiveness of organizational communication dynamics plays a crucial role in the success of urban infrastructure projects in Medan City. Through the implementation of an integrated and responsive communication strategy, the Medan City Government has succeeded in overcoming several significant urban challenges such as congestion and flooding, while also supporting modernization and increasing access for all levels of society. Two-way communication between the government and the community not only increases public participation but also helps in adopting technological innovations and project management, in line with the theory of diffusion of innovation. This success also shows the importance of a good communication structure, as described in the theory of organizational communication, in optimizing operations and coordination between institutions.

This study has several limitations, including the absence of direct interviews with Medan City Government officials involved in the projects, which may have provided deeper insights into the decision-making process and internal communication. For future research, it is recommended to include direct interviews with various stakeholders in government and affected communities. This will allow for a more comprehensive analysis of the dynamics of

internal and external communication and provide a broader picture of the social impacts of infrastructure projects. In addition, future research could explore the impact of new communication technologies in improving the effectiveness of infrastructure project management in other developing cities, strengthening best practices and innovations in project communication and management.

SUGGESTION

Based on the findings and analysis presented in this study, several suggestions can be proposed to enhance the implementation and effectiveness of organizational communication in urban infrastructure projects, particularly within the Medan City Government, first Strengthening Stakeholder Engagement Mechanisms. Future infrastructure development should incorporate more structured and participatory stakeholder engagement mechanisms. This includes organizing regular public consultations, feedback loops, and grievance redressal forums to ensure that community voices are systematically included in the planning and execution phases. Second, Enhancing Digital Communication Platforms. To improve transparency and information accessibility, the Medan City Government is advised to expand and optimize its digital platforms, including mobile apps and integrated websites, for real-time project updates, public announcements, and citizen participation tools. The use of smart technology can bridge gaps in communication, particularly in marginalized or digitally underserved areas. Third, Institutionalizing Communication Training Programs. It is recommended that the government initiate capacity-building programs for public officials, project managers, and communication officers. Training modules should focus on strategic communication, crisis communication, media handling, and participatory communication to ensure a more professional and citizen-centered approach. Fourth, Promoting Inter-Agency Coordination. To address bureaucratic fragmentation, inter-agency communication protocols must be standardized. Establishing a centralized communication task force for each major infrastructure project may help facilitate cross-sector coordination, avoid duplication, and streamline project workflows. Fifth, Further Empirical Studies. For academic advancement, future studies should consider conducting fieldwork through in-depth interviews, focus groups, and surveys involving diverse stakeholders. This will provide a richer understanding of internal communication challenges and the sociocultural dimensions influencing communication effectiveness in large-scale urban projects.

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