

ARTICLE

Transformation of the Government's Collaborative Innovation Model In Handling Street Children

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How to cite: Rakhman, Basri., Wijaya, Indra, & Syah, Ardy Firman. (2025). Transformation of the Government's Collaborative Innovation Model In Handling Street Children. *Jurnal Borneo Administrator*, 22(1), 37-52. <https://doi.org/10.24258/jba.v22i1.1717>

Article History

Received: 21 April 2025

Accepted: 21 February 2026

Keywords:

Collaboration;

Innovation;

Street Children;

Pentahelix.

ABSTRACT

This study examines the transformation of the government's collaborative innovation model in handling street children, focusing on the TRC Saribattang (Rapid Reaction Team) innovation in Makassar City. It is a team initiated by the government and formed by the Social Service of Makassar City to maximize performance related to handling street children, beggars, and homeless people in Makassar City. This research investigates the relative advantages, compatibility, complexity, trialability, and observability of the TRC Saribattang innovation in the context of street children management. Data was collected from 12 participants involved in street children management in Makassar City. The study analyzed their perceptions of the TRC Saribattang innovation. This qualitative phenomenological study explored Makassar's TRC Saribattang innovation for handling street children. Results show simplified processes, stronger cross-sector coordination, and improved access to information, with significant reductions in the number of street children. The implementation's complexity is perceived as low. Observability is evident in the reduction of street children, although discrepancies exist between field reality and reported data. Challenges such as resource limitations, social resistance, and institutional coordination barriers persist. The TRC Saribattang innovation presents a simplified and more coordinated approach to managing street children. The findings of this study are based on a limited number of participants in one city and do not include comparisons with other areas. Explore the long-term impact of the TRC Saribattang innovation, investigate strategies to overcome the identified challenges, and examine the applicability of a pentahelix model for a more integrative approach.

A. INTRODUCTION

The issue of street children has become a complex and multifaceted global problem, encompassing social, cultural, economic, and political aspects, particularly in developing countries (Magor et al., 2024). The United Nations defines street children as children who live or work on the streets without adequate supervision from a responsible adult. Although it is challenging to accurately determine the exact number of street children worldwide, UNICEF estimates that the number will continue to increase as the population grows, internal migration increases, and urbanization occurs (Binford et al., 2023). However, the transformation of this

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collaborative model in the practice of handling street children has not been widely examined, which presents a greater opportunity for novelty in this research.

This social phenomenon is closely related to various structural factors such as poverty, messy households, and peer influence (Embleton, 2021; Gallego et al., 2019; Straus, 2017). In addition, grassroots innovations in the informal sector, such as those applied in India, have also shown an essential role in solving social problems, especially in the face of a lack of formal support (Lakum et al., 2024). This innovation enables low-cost solutions relevant to the challenges of handling street children in Makassar. Furthermore, previous research also underlined that poverty is the main factor that drives children to take to the streets, followed by family problems such as divorce or parental death, as well as social norms of social and cultural norms (Kaplan, 2020; Lima et al., 2021). Street children face essential challenges in fulfilling their rights, including discrimination, lack of access to health and education services, and vulnerability to physical and sexual violence (Abate, 2022; Binford et al., 2023; Thi et al., 2021).

In Indonesia, the government has taken strategic steps to suppress the problem of street children through various programs such as the Child Social Welfare program (PKSA) and the Child-Friendly City (KLA) policy, which targets the creation of a child-friendly environment by 2030 (Nurusshobah, 2019). However, challenges at the regional level remain significant, especially in major cities such as Makassar, the largest metropolitan city in eastern Indonesia. Where rapid urbanization has increased the number and complexity of street children's problems (Lewis et al., 2017). Despite that regulation, the Makassar City Government has made technical regulations derived from it through *Perda Kota Makassar Nomor 2 Tahun, 2008* which substantively adopts a triple helix approach, by involving the Social Service, the Civil Service Police Unit and the Police in dealing with street children. Research results from Hanafie et al. (2025) indicate that the number of street children in Makassar has not experienced a significant decline, despite the continuous efforts of the Civil Service Police Unit (Satpol PP) and the Police in addressing the issue. In 2022, 352 street children were recorded, the same number as in 2021. The number then decreased slightly to 349 in 2023. This minimal change shows that repressive actions like raids and detentions by Satpol PP and the Police fail to address root causes such as poverty, limited opportunities, and poor facilities. Policies remain ineffective, relying mainly on verbal reprimands, and family returns often occur without lasting deterrent effects (Syaharuddin et al., 2021). This social event highlights the gap between the policy and its effectiveness on the ground, highlighting the need for a more comprehensive and sustainable approach.

To address these challenges, the Makassar City Government established the Saribattang Rapid Reaction Team (TRC) in 2014, an innovative approach that adopts the pentahelix model. The TRC Saribattang consists of the Social Services as the primary coordinator, the Satpol PP as the law enforcement unit, and the police as the support for field patrols. Through this integrated approach, the city government not only enforces regulations but also provides training, such as skills training and package education, as a form of long-term intervention. This pentahelix approach reflects the involvement of cross-sectoral government, security forces, civil society, educational institutions, and the private sector in creating a holistic response to addressing street children (Muliанти, 2017; Zainal, 2022). This approach integrates five key actors: government, academia, business, and the media to work together (sharing knowledge and resources) to solve the increasingly complex and dynamic problem of street children in Makassar City. This pentahelix approach has proven effective in addressing complex social issues in large cities of developed countries (Astuti et al., 2020; Repo & Matschoss, 2019; Slee et al., 2022). TRC Saribattang prioritizes a more inclusive and integrative approach to persuasive and referral-based services, drawing on the social pesantren environment (liposus). These innovations not only rely on governments and social institutions in their implementation,

but also support from academics for research, business facilities for financial support, local communities for surveillance and media for information dissemination (Lewis et al., 2017; Setiawati, 2020). Data from the Makassar City Social Service shows a significant decrease in the number of street children handled from 268 children in 2021, to 156 children in 2022 and 87 children in 2023 (Data from the Makassar City Social Service, 2024).

This pentahelix collaboration produces greater synergy in overcoming the problems of street children. Actors play an essential role: the government in formulating policies, academics in providing in-depth data and analysis, business sectors that support financially, communities involved in monitoring and mentoring, and the media in raising public awareness (Calzada, 2020; Kagungan et al., 2021; Lestari et al., 2022; Syahbudi, 2021). Then, Pons-Seres de Brauwer, (2024) also states that the dynamics of innovation acceptance require a deep understanding of the positions and interactions among the actors involved, to ensure that efforts to promote social innovation run smoothly. By exploring best practices in implementing pentahelix collaborative innovation, as well as the factors influencing its implementation, this study enriches the literature on social policy and public sector innovation, providing valuable insights for the study of innovation collaboration in the public sector and for sustainable development in developing countries.

Existing studies highlight that the issue of street children in Indonesia is deeply rooted in structural poverty, family dysfunction, and weak social protection systems. Traditional state responses, such as the Child Social Welfare Program (PKSA) and Child-Friendly City (KLA) initiatives, have sought to address the problem but often remain fragmented and limited in their impact. At the municipal level, Makassar's early reliance on a triple helix model involving social services, the Civil Service Police Unit, and law enforcement was criticized for its repressive orientation, which primarily focused on temporary raids and returning children to families. Evidence showed that this strategy failed to address the root causes of street involvement, leading to repeated cycles of child displacement.

Recent scholarship emphasizes the importance of multi-stakeholder governance models, with the pentahelix approach, integrating government, academia, business, community, and media, emerging as a promising innovation. Studies in Indonesia and internationally demonstrate that such collaboration enhances outreach, integrates social rehabilitation, creates vocational opportunities, and raises public awareness. However, previous empirical work has only partially examined how these models transform in practice and how actors negotiate their roles and resources across institutional boundaries.

This article advances the scientific discourse on collaborative governance and social innovation in addressing street children by offering both empirical and theoretical contributions. The analysis of the TRC Saribattang program in Makassar provides concrete evidence that the pentahelix collaboration model, involving government, academia, business, community, and media, effectively strengthens cross-sector coordination, simplifies service delivery, and enhances program observability, as reflected in measurable reductions in the number of street children. At the theoretical level, the study extends Rogers' diffusion of innovations framework into the domain of child welfare policy, demonstrating how dimensions such as relative advantage, compatibility, complexity, trialability, and observability shape the adoption and sustainability of social innovations within complex, multi-actor contexts. Notably, the findings also underscore persistent structural challenges, including resource limitations, institutional fragmentation, and resistance from families whose livelihoods depend on child labor in the streets, thereby highlighting that the success of innovation is contingent not only on its design but also on adaptive governance and societal acceptance. Finally, by situating Makassar's experience within a broader comparative perspective, the article contributes to global policy debates on inclusive urban governance and child-friendly cities,

offering practical insights for developing countries confronting similar pressures of rapid urbanization and child vulnerability.

B. LITERATURE REVIEW

Introduction to the Pentahelix Model

The Pentahelix model enhances collaborative governance by adding media as a key actor to the previous Triple and Quadruple Helix frameworks. This shift highlights the importance of community engagement, transparency, and effective communication in addressing complex social issues, underscoring the media's crucial role in fostering public awareness and disseminating innovative solutions.

Empirical studies have demonstrated the applicability of this model across diverse domains such as public service innovation, education, environmental management, and public health (Akib, 2021; Laurens, 2024; Meka et al., 2024; Nugraha & Sumaryatiningsih, 2023; A. A. Putri & Hertati, 2023), underscoring its versatility and integrative capacity. Through this evolution, the Pentahelix provides a more comprehensive framework for building synergies, aligning diverse stakeholder interests, and mobilizing resources to create sustainable solutions for multifaceted societal challenges.

Application of Pentahelix in Addressing Street Children's Issues

While direct applications of the Pentahelix model to street children interventions are limited, relevant studies provide insights into its potential effectiveness.

a. Collaborative Governance in Makassar

A study by Akib (2021) highlights the implementation of a Pentahelix-based collaborative governance model in Makassar, Indonesia, to address social issues, including those affecting street children. The initiative involved coordinated efforts among government agencies, academia, community organizations, and the media to conduct outreach, identify street children, conduct home visits, and provide skills training. This approach underscores the importance of multi-stakeholder collaboration in addressing complex social problems (Akib, 2021; Chandra & Ilosa, 2024).

b. Pentahelix in Public Service Innovation

Laurens (2024) conducted a systematic literature review on public service innovations based on Pentahelix collaboration. The study found that such collaborations significantly improve public service quality, with critical success factors including leadership support, shared vision, and effective communication. Although not specific to street children, these findings suggest that Pentahelix collaboration can enhance the effectiveness of social service programs targeting vulnerable populations (Akib, 2021; Laurens, 2024).

Potential Roles of Pentahelix Stakeholders in Addressing Street Children's Issues

Addressing street children requires a multi-sector approach. Academia provides essential research to understand causes and evaluate interventions, while businesses offer funding, vocational training, and job opportunities. Grassroots efforts are key at the community level, and the government must develop policies, allocate resources, and coordinate efforts among stakeholders. Ultimately, the media plays a crucial role in raising public awareness about the plight of street children, advocating for necessary policy changes, disseminating information about available programs, and sharing success stories (Akib, 2021; Yunas et al., 2021).

Challenges and Considerations

Implementing the Pentahelix model to address the issues of street children requires overcoming challenges, including aligning stakeholder interests, sustaining collaboration, and addressing resource constraints. Effective communication, shared goals, and strong leadership are crucial for navigating these challenges and achieving the desired outcomes (Laurens, 2024).

C. METHOD

The research was conducted in Makassar City, South Sulawesi Province, one of the largest metropolitan cities in eastern Indonesia, which faces complex challenges related to street children.

This study uses a qualitative-phenomenological approach and method to explore the transformation of the government's collaborative innovation model through the application of the Saribattang Rapid Reaction Team in handling street children. This approach was chosen because of its ability to identify deeply and comprehensively with complex and emotional phenomena, as well as to understand how the informants involved interpret and experience the phenomenon (Berk et al., 2015; Green & Thorogood, 2018). Sampling was carried out by the purposive sampling technique, i.e., selecting individuals with expertise and knowledge relevant to the research topic (Dedeilia et al., 2020). In qualitative research, the number of participants considered worthy of achieving 'redundancy' ranged from 9 to 17 interviews (Hennink & Kaiser, 2022; Lima et al., 2021). For this study, in-depth interviews were conducted with 12 informants, including government officials, academics, business sectors, communities, media, and social workers, as a data collection tool. The criteria for selecting informants are adjusted to meet the research needs to obtain in-depth and relevant information (see Table 1).

Table 1. Research Informant Criteria

Category Informant	Professional Role	Total
Government	Government officials involved in the TRC Saribattang innovation	2
Academia	Lecturers or researchers who are experts in issues related to the handling of street children	1
Pamong Praja Police Unit (Satpol PP)	Staffs involved in handling street children	2
Police	Police members who are involved in handling street children	2
Social Workers	Implementor of a social rehabilitation-based street child handling program	2
Business sectors	Business representatives who contribute to the handling of street children	1
Social community	Members of the community or the community involved in efforts to handle street children	1
Media	Journalists covering activities related to handling street children	1
Total		12

Source: Data processed by researcher

Qualitative research data, from interviews, document reviews, and observations, undergoes interactive model analysis for processing (Miles et al., 2015). The stages of qualitative data analysis: data collection, condensation, display, and conclusion drawing, guided by hierarchy.

This research proposal was approved by the Ethics Committee of the Makassar City Regional Research and Development Agency (SK: 070/114/BPPD/II/2024). The researcher ensures adherence to ethical practices, including obtaining informed consent, maintaining confidentiality, ensuring anonymity, and providing emotional support to vulnerable populations.

D. RESULT AND DISCUSSION

Transformation of the government's collaborative innovation model in fostering street children

Makassar's strategy for addressing street children has evolved from a traditional triple-helix model—comprising the Social Service, Civil Service Police Unit, and Police—to a collaborative pentahelix innovation framework that integrates government, academia, business, community, and media. The earlier punitive and family-return methods proved ineffective, prompting the establishment of the Saribattang Rapid Reaction Team (TRC) in 2014. The new model emphasized social persuasion, cross-sectoral coordination, and data-driven decision-making within a social *pesantren* context. Empirical results showed a reduction in street-child cases and improved stakeholder synergy. However, persistent challenges include limited resources, institutional coordination gaps, and social resistance from groups economically reliant on street activities.

This study examines the transformation of the collaborative innovation model in addressing street children in Makassar City, utilizing an analysis of the relative advantages, compatibility, complexity, triability, and observability of TRC Saribattang (Rogers et al., 2019). Data were obtained from 12 participants, consisting of internal and external elements involved in handling street children.

Relative Advantages

The results of the study show that the TRC Saribattang innovation provides its own value of excellence, especially in simplifying the process of handling street children. This approach facilitates cross-sectoral coordination between governments, academia, businesses, social communities, and the media. In the context of public sector innovation, relative advantage is an essential factor in accelerating adoption (Alharbi, 2020; Setiawatia & Syafarib, 2020). The informant revealed that this innovation facilitates access to information and guidance for disciplined street children.

"With the transformation of the government's collaborative innovation through the TRC Saribattang innovation, we can reach and nurture street children in an inclusive, integrative, and sustainable manner" (Mr. AP, government official/Makassar City Social Service).

The benefits of these innovations are relevant to increased access to social justice services for vulnerable groups, as described by Abate (2022). In the context of street children in Ethiopia, who face similar accessibility challenges. This innovation transformation also helps the government comprehensively identify the problems of street children and facilitate more effective decision-making.

The innovation transformation in Makassar effectively supports government efforts to identify and address the problems of street children, thereby enhancing social order and public comfort. Government officials acknowledge its positive impact, while social workers highlight constraints in training and resource capacity, emphasizing the need for improved workforce competence and adequate facilities for inclusive rehabilitation. Law enforcement recognizes the system's organizational benefits but calls for strengthened supervision to prevent overlap in authority and misconduct. The business sector views the innovation as economically beneficial when integrated with vocational training, fostering social and economic empowerment for street children through multisectoral collaboration and sustainable development approaches.

The benefits of innovation obtained from implementing collaborative innovation transformation in addressing street children in the city of Makassar are relevant to those obtained from increasing access to social welfare for street children in Ethiopia, which face similar accessibility challenges (Abate, 2022). Similar to the findings of the research in Kenya,

the main challenge in implementing social innovations such as TRC Saribattang is to ensure that these programs can access all elements of society equally (Embleton, 2020; Embleton et al., 2016) (Embleton, 2021; M'mboga Akala, 2021). Often, there is a gap in the distribution of innovation benefits to vulnerable populations, as in Makassar. This can be seen, although there has been a significant decrease in street children in Makassar through this innovation, but areas with high poverty levels are still challenging to reach and order. Definitely, this is almost identical to the problem of access to social services faced in Kenya.

The TRC Saribattang innovation enhances street-child management efficiency through intersectoral collaboration, reducing case handling from weeks to 24–72 hours. Rapid assessment enables timely referral and rehabilitation via education or vocational programs. Quantitative data show a decrease in street-child cases (268 in 2021 to 87 in 2023). Despite improved outcomes, sustainability remains constrained by resource limitations.

Compatibility

Compatibility is closely related to the extent to which innovation aligns with the values and norms that its users adopt. The informant reported that the Saribattang TRC was in accordance with the Makassar City Government's work system and culture. However, there are significant challenges in acceptance by certain groups, especially those whose livelihoods depend on street children who work as beggars, street vendors, or buskers. For them, the existence of TRC Saribattang is considered to interfere with the family's source of income, thus causing rejection of this innovation.

This study examines the transformation of Makassar's collaborative innovation model in addressing street children through the TRC Saribattang initiative. Findings indicate improved intersectoral coordination, reduced street children, and enhanced social services. However, limitations include a narrow geographic scope, limited informant diversity, and potential data bias. Future research should employ comparative, longitudinal, and participatory approaches to strengthen validity, inclusivity, and the long-term evaluation of collaborative governance models. Innovative solutions must encompass all components of society, especially those vulnerable to change, as proposed by Slee et al. (2022), in the context of social innovation in marginalized communities.

A critical barrier to TRC Saribattang's success is child economic exploitation by families, where children's street activities are survival tactics, conflicting with policy efforts to protect and reintegrate them (Rey-Guerra et al., 2022). This issue requires a policy approach integrating economic empowerment, conditional cash transfers, and community-based alternatives. Without addressing household dependence on child labor, interventions may perpetuate exploitation cycles, requiring deeper social protection and inclusive education.

Complexity

The study reveals that Saribattang's TRC innovation is relatively easy to implement with effective coordination and regular evaluations, as emphasized by social workers. However, procedural obstacles hinder coordination among key agencies, such as social services, police, and the TRC, slowing down field operations. Additionally, business representatives express readiness to contribute through CSR but face uncertainty in defining their roles within the collaborative framework. Procedural constraints in cross-agency coordination show the complexity of execution in the field, as identified by Astuti et al. (2020), in a study of cross-agency collaboration in the public sector. The TRC Saribattang innovation is facing delays due to misaligned SOPs across agencies, leading to confusion and inefficient field execution. This misalignment hinders real action and reduces the effectiveness of innovation on the ground, similar to the challenges found in a study (Kagungan et al., 2021), regarding pentahelix collaboration in tourism development policies. Addressing these barriers requires establishing

harmonized inter-agency SOPs and a shared digital platform to streamline coordination, thereby reducing complexity and enhancing the operational impact of the TRC Saribattang.

Triability

The study reveals that Saribattang's TRC innovation is relatively easy to implement with effective coordination and regular evaluations, as emphasized by social workers. However, procedural obstacles hinder coordination among key agencies, such as social services, police, and the TRC, slowing down field operations. Additionally, business representatives express readiness to contribute through CSR but face uncertainty in defining their roles within the collaborative framework.

The limited trial of the collaborative model transformation through TRC Saribattang's innovation in handling street children is considered necessary by academics and the business sector, in line with Masfufah & Agustina's (2024) statement, which emphasizes the importance of testing innovations in small populations to understand the response before full implementation. On the other hand, the challenges faced in this trial also reflect the constraints of public-sector innovation, as underlined by Lewis et al. (2017), highlighting the importance of multi-stakeholder support in the piloting and adoption of innovations. This is also supported by research conducted by A. R. A. Putri (2024), which shows that the current collaboration processes in Makassar City for handling street children using the Penta Helix model are not yet effective. The cross-sectoral collaboration process is not optimal, primarily due to a lack of synergy among the actors involved. As a result, the handling of street children in Makassar City has not been managed effectively.

Observability

Observability in this study can be measured through several methods, including field patrols (see Figure 1) and the recollection of data on ordered street children. Quantitative data obtained through data recapitulation indicate a significant decrease in the number of street children, from 268 in 2021 to 87 in 2023 (Makassar City Social Service Data, 2024).

However, Interviews reveal an uneven decline in targeted areas, notably where poverty and limited social services persist. A Makassar Social Service official noted that monthly patrols and data recaps assess the effectiveness of TRC Saribattang, guiding continuous evaluation and improvement of the program.



(Source: Makassar Government Regional, 2024)

Figure 1. TRC Saribattang Disciplines Street Children

From that figure, informants revealed that, although monthly data recapitulations on street children exist, they often fail to reflect the ground conditions accurately, thereby reducing evaluation accuracy. Social workers and community members noted uneven program impact—some areas show progress while others remain underserved. Media involvement enhances

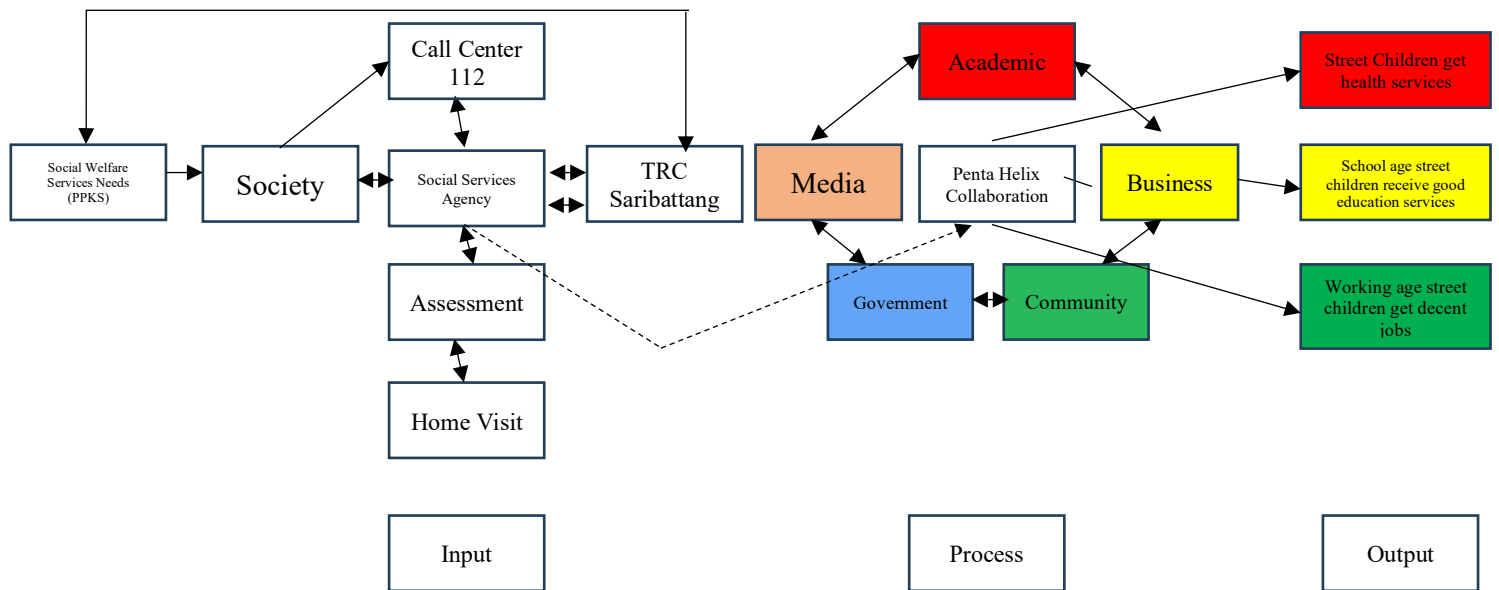
visibility but cannot yet ensure broad, inclusive outcomes, emphasizing the ongoing need for improved data accuracy, equitable implementation, and more profound, real-world program impact.

The observability implications of implementing collaborative innovation transformation through the Saribattang TRC are evident in the significant decrease in the number of street children; however, the convergence between data and reality on the ground reveals challenges in terms of accurately measuring and holistically assessing impact. As revealed by [Macleod \(2023\)](#), the integration of qualitative and quantitative methods is particularly significant when addressing complex social problems. Then, the media play a vital role in disseminating the program's results, although the impact is not evenly distributed across the region. This finding is consistent with a study conducted by [Embleton \(2021\)](#) in Kenya, which concluded that access to health services for street children is often unevenly distributed across the region.

Recommendation of Development Models and Strategies

Research shows success in handling street children; further strengthening is needed. This aligns with the opinion expressed by [Casula & Migone \(2025\)](#). Innovation in the public sector requires broad stakeholder participation to address resistance and challenges, particularly in the rehabilitation and empowerment of street children. [Abate \(2022\)](#) highlights the importance of a multi-level approach to comprehensively addressing street children, with cross-sectoral or multi-actor collaboration strengthening interventions. Then, [Dankyi \(2022\)](#) and [Lucchini \(2020\)](#) underscore the importance of synergy among actors to optimize the impact of social innovation in a diverse society. Therefore, it is recommended that a more innovative and integrative pentahelix collaboration model be implemented as an effective solution to the problem of street children worldwide.

Considering the complexity of the diffusion of social innovation and the dynamics that occur in the context of this innovation, the heuristic framework of [Pons-Seres de Brauwer \(2024\)](#) can be used as an instrument to understand stakeholder interactions in this context and to identify areas for further research, especially regarding the social acceptance of recommended innovations. This model integrates [Rogers' innovation diffusion theory \(2019\)](#) and Pentahelix's multi-stakeholder collaboration framework ([Calzada, 2020](#); [Syaharuddin et al., 2021](#)), which aims to increase synergy among the government, society, academia, the business sector, and the media. This collaboration is expected to produce more effective, inclusive, and sustainable solutions to address street children, reaching across various aspects of their lives, including education, health, and economic empowerment, so that the positive impact is felt by all parties (see Figure 2).



Source: Researcher, 2024.

Figure 2. New Model integrates innovation and Pentahelix's multi-stakeholder collaboration

A stronger, more comprehensive collaborative approach can enhance the effectiveness of implementing these innovations by involving more stakeholders across various aspects of street child management, such as education, health, social rehabilitation, and economic empowerment (see Table 2). Strengthening this collaboration is expected to enhance the effectiveness of this innovation, make Makassar a child-friendly city, and align with the national vision of a Street Child-Free Indonesia.

The success of these innovations can become best practices for other cities in Indonesia and globally, and contribute to global knowledge and understanding of social innovation in handling urban problems (Chimdessa, 2020; Magor et al., 2024). This model is also in line with the concept of inclusive cities proposed by UNICEF, in which the protection and fulfillment of children's rights are priorities in urban development policies. This approach is relevant to practices implemented in many countries, where multi-sectoral collaboration has been successful in reducing the number of street children through integrated interventions. In China, the construction of friendly cities using empathy-based storytelling methods, street image, and deep learning has shown its effectiveness (Yang et al., 2024). Meanwhile, in Israel, the implementation of teachers as street bureaucrats who provide educational services for immigrant children has had a positive impact (Binhas, 2024). The provision of a child-friendly environment in China (Guo, 2023) can serve as a best practice for creating sustainable solutions to address street children (Anangisye, 2022; Lonnie, 2021; Sohail, 2021).

By combining global perspectives and comparing similar interventions across various contexts, these recommendations will not only enhance the understanding of the effectiveness of this collaboration model but also make a significant contribution to research and practice in the field of social innovation.

Table 2. The Role of Stakeholders in Innovative and Integrative Pentahelix Collaboration

Element	Role
Academia	Developing innovation policies, monitoring implementation, and providing technical training.
Society	Conducting social coaching and rehabilitation, and providing skills training.
Government	Coordinating, supervising and building the capacity of the Saribattang Rapid Reaction Team across sectors
Business	providing corporate social responsibility funds to support the empowerment program of street children.
Media	Disseminating information and results from the implementation of innovations to increase the participation of each stakeholder.

Source: (Researcher, 2024).

The Pentahelix collaboration comprises five key stakeholders: the Academy, Society, Government, Business, and Media, each fulfilling distinct functions. The Academy formulates and monitors innovation policies; Society provides social rehabilitation and skills training; Government coordinates multi-sectoral capacity building; Business funds empowerment initiatives via CSR; and Media disseminates outcomes, enhancing stakeholder engagement and innovation diffusion.

E. CONCLUSION

This paper explores the transformation of the collaborative innovation model for addressing street children in Makassar. It highlights improved cross-sectoral coordination, reduced numbers of street children, and enhanced social services, while noting challenges such as social resistance and procedural barriers. The study advocates for a more inclusive pentahelix model to strengthen stakeholder synergies.

Despite the valuable insights this study offers into the transformation of the government's collaborative innovation model through the TRC Saribattang in Makassar City, several limitations must be acknowledged. The research is geographically limited to a single urban area, thereby constraining the generalizability of its findings to broader regional or national contexts. Furthermore, the study's qualitative approach, involving only 12 informants primarily from institutional backgrounds, limits the representation of street children and their families, whose voices are crucial in evaluating the real impact of such interventions. The reliance on self-reported data also presents the possibility of bias, while discrepancies between official data and field realities highlight the need for more robust monitoring mechanisms. In light of these limitations, future research should adopt a more inclusive, comprehensive approach to address them. Comparative studies across different cities would enrich understanding of contextual challenges and best practices, while longitudinal designs could evaluate the long-term sustainability of collaborative innovations. Integrating quantitative assessments and participatory methods would enhance the validity and depth of findings, particularly by centering the perspectives of marginalized communities.

This study examines the transformation of Makassar's collaborative innovation model in addressing street children through the TRC Saribattang initiative. Findings indicate improved intersectoral coordination, reduced street children, and enhanced social services. However, limitations include a narrow geographic scope, limited informant diversity, and potential data bias. Future research should employ comparative, longitudinal, and participatory approaches to strengthen validity, inclusivity, and the long-term evaluation of collaborative governance models.

Acknowledgement

In this manuscript, the authors express their gratitude to the Makassar City Government for providing funding for this research.

Contributorship

Indra Wijaya works in the conceptualization, methods, and results; 2) Basri Rakhman works in methods, ideas, and techniques analysis; 3) Ardy Firman Syah works in proofreading, plagiarism checker, and techniques analysis.

REFERENCES

- Abate, D. (2022). Health Status of Street Children and Reasons for being Forced to Live on the Streets in Harar, Eastern Ethiopia. Using Mixed Methods. *PLoS ONE*, 17(3). <https://doi.org/10.1371/journal.pone.0265601>
- Akib, H. H. (2021). Revitalizing Institutional Functions in Handling Street Children: Good Practices from Indonesia. *Turkish Journal of Physiotherapy and Rehabilitation*, 32(3), 5727–5735.
- Alharbi, A. (2020). Virtual Reality Street-Crossing Training for Children with Autism in Arabic Language. In *2020 International Conference on Innovation and Intelligence for Informatics, Computing and Technologies, 3ICT 2020*. <https://doi.org/10.1109/3ICT51146.2020.9311981>
- Anangisye, W. A. L. (2022). Educational Expectations of School-Age Street Children in Tanzania. *African Review (Tanzania)*, 49(4), 528–549. <https://doi.org/10.1163/1821889x-12340066>
- Astuti, R. S., Warsono, H., & Rachim, Abd. (2020). *Collaborative Governance Dalam Perspektif Administrasi Publik* (Tim DAP Press, Ed.; 1st ed., Vol. 1). Universitas Diponegoro Press: Semarang
- Berk, M., Otmar, R., Dean, O., Berk, L., & Michalak, E. (2015). *Chapter Six - The Use of Mixed Methods in Drug Discovery: Integrating Qualitative Methods into Clinical Trials* (M. Tohen, C. L. Bowden, A. A. Nierenberg, & J. R. B. T.-C. T. D. C. in M. D. Geddes, Eds.; pp. 59–74). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-12-405170-6.00006-3>
- Binford, W., Bochenek, M. G., Cernadas, P. C., Day, E., Field, S., Hamilton, M., Liefwaard, T., Mezmur, B., Mulatu, F., & Skelton, A. (2023). Report on Enforcing the Rights of Children in Migration. *Laws*, 12(5), 85.
- Binhas, A. (2024). Teachers as Street-Level Bureaucrats: Work with Immigrant Children in Israel. *International Journal of Intercultural Relations*, 101, 102003. <https://doi.org/https://doi.org/10.1016/j.ijintrel.2024.102003>
- Calzada, I. (2020). Democratising Smart Cities? Penta-helix Multistakeholder Social Innovation Framework. *Smart Cities*, 3(4), 1145–1172.
- Casula, M., & Migone, A. (2025). Collaborative Innovation in the Public Sector and the Policy Design Dilemma: a Promising Analytical Perspective. *Policy Design and Practice*, 8(2), 149–158. <https://doi.org/10.1080/25741292.2025.2539570>
- Chandra, P. S., & Ilosa, abdiana. (2024). Collaborative Governance in Dealing With Street Children's Problems with the Penta Helix Approach. *El-Riyasah*, 15(2), 106–119. <https://ejournal.uin-suska.ac.id/index.php/elriyasah/article/view/33516>
- Chimdessa, A. (2020). *Initiation Into Street, Challenges, Means of Survival and Perceived Strategies to Alleviate Its Plights Among Street Children in Addis Ababa, Ethiopia 2019*. <https://doi.org/10.21203/rs.2.22484/v1>
- Dankyi, E. (2022). Street Children in Ghana's Golden Triangle Cities: Mental Health Needs and Associated Risks. *Child Psychiatry and Human Development*, 53(4), 840–851. <https://doi.org/10.1007/s10578-021-01223-5>
- Dedeilia, A., Sotiropoulos, M. G., Hanrahan, J. G., Janga, D., Dedeilias, P., & Sideris, M. (2020). Medical and Surgical Education Challenges and Innovations in the COVID-19 Era: A Systematic Review. *In Vivo*, 34, 1603–1611. <https://doi.org/10.21873/invivo.11950>
- Embleton, L. (2020). Characterizing Street-connected Children and Youths' Social and Health Inequities in Kenya: A Qualitative Study. *International Journal for Equity in Health*, 19(1). <https://doi.org/10.1186/s12939-020-01255-8>

- Embleton, L. (2021). Recommendations for Improving Access to Healthcare for Street-connected Children and Youth in Kenya: A Qualitative Study. *Children and Youth Services Review, 131*. <https://doi.org/10.1016/j.chidyouth.2021.106302>
- Embleton, L., Lee, H., Gunn, J., Ayuku, D., & Braitstein, P. (2016). Causes of Child and Youth Homelessness in Developed and Developing Countries: A Systematic Review and Meta-analysis. *JAMA Pediatrics, 170*(5), 435–444.
- Gallego, R., Novo, M., Fariña, F., & Arce, R. (2019). Child-to-parent Violence and Parent-to-child Violence: A Meta-analytic Review. *European Journal of Psychology Applied to Legal Context, 11*(2), 51–59.
- Green, J., & Thorogood, N. (2018). *Qualitative Methods for Health Research*. London: SAGE Publication.
- Guo, D. (2023). Environmental Affordances and Children's Needs: Insights from Child-friendly Community Streets in China. *Frontiers of Architectural Research, 12*(3), 411–422. <https://doi.org/10.1016/j.foar.2022.11.003>
- Hanafie, N. K., Andi Aco Agus, & Annisa Nurul Awalia. (2025). Implementasi Perda Nomor. 2 Tahun 2008 terhadap Pemenuhan Hak Anak Jalanan di Kota Makassar. *Tomalebbi: Jurnal Pemikiran, Penelitian Hukum, Pendidikan Pancasila dan Kewarganegaraan, 12*(1), 58–63. <https://ojs.unm.ac.id/tomalebbi/article/download/70395/31927>
- Hennink, M., & Kaiser, B. N. (2022). Sample Sizes for Saturation in Qualitative Research: A Systematic Review of Empirical Tests. *Social Science & Medicine, 292*, 114523.
- Kagungan, D., Duadji, N., & Meutia, I. F. (2021). *Pentahelix Model Collaboration in Tourism Industry Development Policy in Pesawaran Regency*. <https://doi.org/10.2991/assehr.k.211206.041>
- Kaplan, V. (2020). The Levels of Anger and Aggression in Street Children with Substance Dependence. *Journal of Child and Adolescent Psychiatric Nursing, 33*(4), 239–247. <https://doi.org/10.1111/jcap.12275>
- Lakum, A. C., Namrata, & Kumar, H. (2024). Diffusion Dynamics of the Informal Sector Sustainable Innovations: Exploring Cases of Grassroots Innovations in India. *Environmental Innovation and Societal Transitions, 52*, 100886. <https://doi.org/https://doi.org/10.1016/j.eist.2024.100886>
- Laurens, S. (2024). Model Inovasi Pelayanan Publik Berbasis Kolaborasi Pentahelix dalam Meningkatkan Daya Saing Daerah. *JURNAL BADATI, 6*(2), 76–92. <https://ojs.ukim.ac.id/index.php/badati/article/view/1351/946>
- Lestari, F., Cook, M., Johnstone, K., Wardhany, M. S., Modjo, R., Widanarko, B., & Octaviani, D. F. (2022). COVID-19 in the Workplace in Indonesia. *Sustainability, 14*(5), 2745.
- Lewis, J. M., Ricard, L. M., & Klijjn, E. H. (2017). How Innovation Drivers, Networking and Leadership Shape Public Sector Innovation Capacity. *International Review of Administrative Sciences, 84*(2), 288–307. <https://doi.org/10.1177/0020852317694085>
- Lima, R. F. F., Raffaelli, M., Morais, N. A. de, Santana, J. P., & Koller, S. H. (2021). Capturing the Heterogeneity of Life on the Streets: A Person-centered Analysis of Street Histories and Social Connections of Youth. *Journal of Adolescence, 93*, 80–89. <https://doi.org/10.1016/j.adolescence.2021.10.004>
- Lonnie, E. (2021). Exploring Patient-provider Interactions and the Health System's Responsiveness to Street-connected Children and Youth in Kenya: A Qualitative study. *BMC Health Services Research, 21*(1). <https://doi.org/10.1186/s12913-021-06376-6>
- Lucchini, R. (2020). Children in Street Situations: A Complex Reality. In *Children's Well-Being: Indicators and Research* (Vol. 21, pp. 43–59). https://doi.org/10.1007/978-3-030-19040-8_3
- Macleod, S. L. (2023). Children in Street Situations' Access to Healthcare: Qualitative Findings from the Street Child World Cup 2022. *BMJ Paediatrics Open, 7*(1). <https://doi.org/10.1136/bmjpo-2023-002101>
- Magor, H. D., Molan, K. S. H., Sius, K. T., & Nyong, F. (2024). Modal Sosial: Sebuah Perspektif Terhadap Problematika Anak Jalanan Di Kota Kupang. *Jurnal Administrasi Negara, 30*(2), 115–135. <https://doi.org/10.33509/jan.v30i2.2922>
- Masfufah, D. N., & Agustina, I. F. (2024). Actors' Cooperation in Overcoming Street Children. *Indonesian Journal of Public Policy Review, 25*(1). <https://doi.org/10.21070/ijppr.v25i1.1358>

- Meka, C. E., Manoe, L. S. B., & Roen, Y. A. (2024). Sociological Study on the Participation of Pentahelix Elements in the Reduction of Stunting in Oefafi Bethel Church, East Kupang District, Kupang Regency, East Nusa Tenggara Province. *International Journal of Research and Innovation in Social Science*, VIII(II), 225–230. <https://doi.org/10.47772/IJRISS.2024.802016>
- Miles, M. B., Huberman, A. M., & Saldana, J. (2015). *Qualitative Data Analysis: A Methods Sourcebook* (3rd Ed.). New York: SAGE Publications.
- M'mboga Akala, D. B. (2021). Revisiting Education Reform in Kenya: A Case of Competency Based Curriculum (CBC). *Social Sciences & Humanities Open*, 3(1), 100107. <https://doi.org/10.1016/j.ssaho.2021.100107>
- Mulianti. (2017). *Revitalisasi Program Dinas Sosial Kota Makassar dalam Penanganan Anak Jalanan di Kota Makassar* [Script]. Makassar: UIN Alauddin Makassar.
- Nugraha, Y. K., & Sumaryatiningsih, S. (2023). The Pentahelix Model: Strengthening Innovation Potential and Fostering Science and Education Integration. *Proceedings of the International Conference on Islamic Education (ICIED)*, 540–554. <https://conferences.uin-malang.ac.id/index.php/icied/article/view/2649>
- Nurusshobah, S. F. (2019). Konvensi hak anak dan implementasinya di Indonesia. *Jurnal Ilmiah Kebijakan Dan Pelayanan Pekerjaan Sosial*, 1(2).
- Perda Kota Makassar Nomor 2 Tahun. (2008). *Perda Kota Makassar Nomor 2 Tahun 2008 tentang Pembinaan Anak Jalanan, Gelandangan, Pengemis dan Pengamen*.
- Pons-Seres de Brauwer, C. (2024). Acceptance Dynamics of Innovation Diffusion: A Heuristic Framework for Analysing Actor Reorientations in Sustainability Transitions. *Energy Research & Social Science*, 111, 103480. <https://doi.org/https://doi.org/10.1016/j.erss.2024.103480>
- Putri, A. A., & Hertati, D. (2023). Kolaborasi Model Pentahelix dalam Percepatan Penurunan Stunting di Kabupaten Jombang. *Ministrate: Jurnal Birokrasi Dan Pemerintahan Daerah*, 5(3), 69–81. <https://doi.org/10.15575/jbpd.v5i3.26068>
- Putri, A. R. A. (2024). *Kolaborasi Model Penta Helix dalam Penanganan Anak Jalanan Di Kota Makassar* [Script]. Makassar: Universitas Hasanuddin.
- Repo, P., & Matschoss, K. (2019). Social Innovation for Sustainability Challenges. *Sustainability*, 12(1), 319.
- Rey-Guerra, C., Maldonado-Carreño, C., Ponguta, L. A., Nieto, A. M., & Yoshikawa, H. (2022). Family Engagement in Early Learning Opportunities at Home and in Early Childhood Education Centers in Colombia. *Early Childhood Research Quarterly*, 58(1), 35–46. <https://doi.org/10.1016/j.ecresq.2021.08.002>
- Rogers, E. M., Singhal, A., & Quinlan, M. M. (2019). Diffusion of Innovations. *An Integrated Approach to Communication Theory and Research*, 415–434. New York: Routledge.
- Setiawati, T. (2020). The Policy for Handling Street Children Based on Organisational Implementation in Serang City, Banten Province. *International Journal of Innovation, Creativity and Change*, 12(6), 199–207.
- Setiawati, T., & Syfarib, A. (2020). The Policy for Handling Street Children Based on Organisational Implementation in Serang City, Banten Province. *International Journal of Innovation, Creativity and Change*, 12(6).
- Slee, B., Lukesch, R., & Ravazzoli, E. (2022). Social Innovation: The Promise and the Reality in Marginalised Rural Areas in Europe. *World*, 3(2), 237–259.
- Sohail, A. H. (2021). Sex and the Streets: the Open Secret of Sexual Abuse among Pakistan's Two Million Street Children. In *Child and Adolescent Psychiatry and Mental Health* (Vol. 15, Issue 1). <https://doi.org/10.1186/s13034-021-00420-3>
- Straus, M. A. (2017). Ordinary Violence, Child Abuse, and Wife Beating: What do They Have in Common? In *Physical violence in American families* (pp. 403–424). New York: Routledge.
- Syahrudin, S., Agustang, A., Idkhan, A. M., & Rifdan, R. (2021). Strategi Dinas Sosial Dalam Penanganan Anak Jalanan Di Kota Makassar. *JISIP (Jurnal Ilmu Sosial Dan Pendidikan)*, 5(4).
- Syahbudi, M. (2021). *Ekonomi Kreatif Indonesia: Strategi Daya Saing UMKM Industri Kreatif Menuju Go Global (Sebuah Riset Dengan Model Pentahelix)*. Medan: Merdeka Kreasi Group.

- Thi, A. M., Zimmerman, C., Pocock, N. S., Chan, C. W., & Ranganathan, M. (2021). Child Domestic Work, Violence, and Health Outcomes: a Rapid Systematic Review. *International Journal of Environmental Research and Public Health*, *19*(1), 427.
- Yang, Y., Wang, Q., Wu, D., Hang, T., Ding, H., Wu, Y., & Liu, Q. (2024). Constructing Child-friendly Cities: Comprehensive Evaluation of Street-level Child-friendliness using the Method of Empathy-Based Stories, Street View Images, and Deep Learning. *Cities*, *154*, 105385. <https://doi.org/https://doi.org/10.1016/j.cities.2024.105385>
- Yunas, N. S., Wahyuningsih, E., & Jatmiko, A. R. (2021). Strengthening the Community in Increasing Village Potential through Pentahelix Collaboration. *International Journal of Research in Business and Social Science (2147- 4478)*, *10*(1), 149–157. <https://doi.org/10.20525/ijrbs.v10i1.1021>
- Zainal. (2022). *Ingin Tertibkan Anak Jalanan, Pemkot dan Dinsos Makassar Gunakan 3 Hal Ini*. Retrieved from <https://makassar.terkini.id/sebagai-bentuk-kepedulian-pemkot-makassar-dan-dinsos-membuat-perda-tentang-anak-jalanan/>

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