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REVOLUTIONIZING ZAKAT DISTRIBUTION TO MUALAF THROUGH THE DEVELOPMENT OF GIS-BASED APPLICATION

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ABSTRACT

This research examines the potential for transformation inherent in the development of GIS-empowered applications, focusing on revolutionizing the distribution of Zakat to Mualaf, individuals who have recently converted to Islam. The conventional method of Zakat distribution faces challenges in terms of efficiency and transparency. However, by integrating spatial data and real-time analytics, GIS technology provides an innovative solution that enables precise and equitable allocation of funds. To address this issue, the study thoroughly reviews existing models, identifies their deficiencies, and develops a customized application that harnesses the power of GIS. This application utilizes geospatial data to identify areas with a high concentration of Mualaf, assess the socio-economic conditions of these areas, and dynamically adjust Zakat disbursements accordingly. As a result, transparency and accountability are greatly enhanced. In order to comprehensively evaluate the outcomes of this approach, the research employs a mixed-methods approach that combines quantitative analysis with qualitative insights gathered from user experiences. Beyond its implications for the field of Zakat distribution, this study also contributes to the broader discourse on the application of GIS technology in humanitarian aid, offering valuable insights into how philanthropic efforts can be optimized for diverse beneficiary populations.

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INTRODUCTION

Zakat's effective and fair allocation assumes great significance, particularly when addressing the requirements of Mualaf—individuals who have recently embraced Islam. The traditional approaches to distributing Zakat have encountered ongoing difficulties, characterized by inefficiencies and a lack of accuracy in reaching the intended recipients (Ahmad et al., 2023). The basis of this research lies in the growing acknowledgment of Geographic Information System (GIS) technology as a catalyst for innovative and data-driven decision-making (Yu.I. et al., 2022). As technology continues to advance, the integration of GIS-powered applications offers an unparalleled opportunity to enhance the transparency, efficiency, and targeted impact of Zakat distribution. This research seeks to harness the spatial intelligence of GIS technology to address the specific requirements of Mualaf communities, with the aim of establishing a more responsive and inclusive framework for allocating Zakat. The urgency of this investigation is underscored by the increasing complexity of societal needs and the ever-changing nature of charitable endeavors. By delving into the development of GIS-powered applications, the research endeavors to bridge the gap between traditional methods of Zakat distribution and the contemporary demands of philanthropy, presenting a potential shift in addressing the unique challenges encountered by Mualaf individuals.

LITERATURE REVIEW

The existing body of academic research on Geographic Information System (GIS) technology in the field of philanthropy emphasizes its potential to bring about significant changes by optimizing the allocation of resources, improving transparency, and enhancing overall efficiency in the distribution of funds. Various studies confirm that GIS is well-suited for streamlining philanthropic initiatives, as it provides a decision-making framework that is enriched with spatial information, allowing resources to be directed precisely to where they are most needed. GIS empowers organizations by visually mapping and analyzing geographical data, facilitating a comprehensive understanding of socio-economic landscapes and identifying areas with the greatest need (Maria & Chrysaida-Aliki, 2021). One notable characteristic of GIS is its ability to perform real-time data analytics, which allows for dynamic adjustments to strategies in response to changing circumstances (V.A. et al., 2022). This flexibility is crucial in addressing immediate and emerging needs within communities.

Moreover, the visual representation of data provided by GIS enhances accessibility for various stakeholders, including donors, administrators, and beneficiaries(Manaswi, Saha. et al., 2022). The literature also highlights the effectiveness of GIS in disaster response and humanitarian aid, with a particular emphasis on its role in coordinating relief efforts and ensuring the swift delivery of aid to affected areas. As philanthropy continues to evolve, GIS is emerging as a valuable tool that not only enhances the efficiency of resource distribution but also promotes accountability and transparency. The integration of GIS into the distribution of Zakat to Mualaf holds significant potential for amplifying the impact and expanding the reach of charitable contributions.

ZAKAT DISTRIBUTION CHALLENGES FOR MUALAF

The scholarly literature investigating the challenges that arise in the distribution of Zakat for individuals who have recently converted to Islam sheds light on the specific difficulties faced by this group (Rusli & Abdul Kadir, 2022). These individuals, known as Mualaf, often encounter unique circumstances related to their socio-economic status, cultural integration, and overall adjustment, which may not be fully addressed by the traditional models of Zakat distribution (Omar & Hajimin,

2023). Various studies emphasize the necessity of a more customized approach to ensure that assistance provided to this demographic is both inclusive and effective (Syukri Jalil et al., 2022). The existing challenges in this context include identifying Mualaf communities, comprehending their nuanced needs, and navigating cultural sensitivities. Furthermore, Mualaf individuals may encounter stigmatization or barriers when attempting to access the traditional channels of Zakat distribution. It is essential to address these challenges to develop a geographical information system (GIS)-based application that aims to provide a responsive and targeted solution that acknowledges and effectively addresses the unique aspects of Mualaf communities in the process of Zakat distribution.

SOCIAL IMPACT OF GIS IN CHARITABLE INITIATIVES

In addition to its logistical and operational advantages, Geographic Information System (GIS) technology has been explored in the literature for its profound social impact on charitable initiatives. The studies delve into the transformative potential of GIS in fostering community engagement, social cohesion, and inclusivity in philanthropic efforts (Rinner & Bird, 2009). GIS facilitates the creation of interactive maps and platforms that empower communities, allowing them to actively participate in decision-making processes related to resource allocation and community development projects (Wright et al., 2019). The literature emphasizes the role of GIS in democratizing philanthropy by giving a voice to the beneficiaries and fostering a sense of ownership and pride in community development endeavors. This social dimension of GIS technology opens new avenues for collaborative and community-driven approaches in philanthropy beyond its operational benefits.

METHODOLOGY

The research is organized into four distinct phases, each contributing to developing and validating a model for distributing Zakat to Mualaf recipients, supported by a mobile application with Geographic Information System (GIS) capabilities. In Phase 1, the literature review serves as the foundation for the research by identifying the research topic, gathering data from diverse and reliable sources, evaluating the relevance and credibility of the information, analyzing trends, and creating a comprehensive literature review. This phase offers valuable insights into existing models for managing Zakat distribution, the utilization of GIS applications in philanthropy, and the challenges Mualaf recipients face. Phase 2 involves meticulous planning of the mobile application supported by GIS. Researchers focus on selecting appropriate GIS software, determining the necessary data types for integration, and designing effective methods for the Zakat distribution model. This phase ensures that the planned application aligns with the specific needs of distributing Zakat to Mualaf recipients, maximizing the advantages of geospatial information analysis and management. Phase 3 transitions into the actual development of the GIS-supported mobile application. Utilizing GIS technology, the prototype processed geospatial data, incorporating information about eligible Mualaf recipients, and simulations were conducted to assess its functionality and accuracy. The objective is to create a fast, precise, and relevant application that enhances the efficiency of managing Zakat distribution. The research design for Phases 2 and 3 is visually represented in Figure 3, illustrating the workflow of the mobile application for Zakat distribution, supported by GIS technology. In Phase 4, the model undergoes validation by experienced experts from the State Zakat Board of Kedah (LZNK) and Hidayah Foundation Centre (HCF). These experts evaluate the data's quality, assess GIS technology's effectiveness, and provide recommendations for enhancing the model. This phase of expert validation ensures that the model is feasible and useful in effectively managing Zakat distribution to Mualaf recipients.

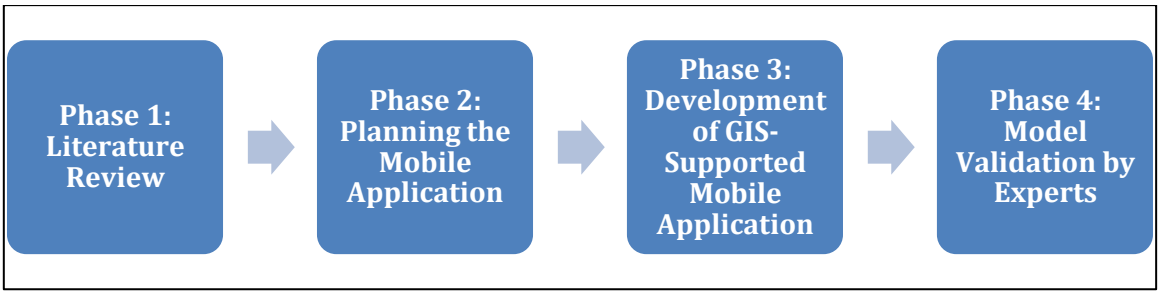


Figure 1: Integrated Workflow for GIS-Supported Zakat Distribution Mobile Application Development and Validation

RESEARCH FINDINGS AND DISCUSSIONS

Transforming Zakat Distribution for Mualaf

The research findings highlight the potential of GIS technology to revolutionize the distribution of Zakat. GIS acts as a catalyst for accuracy in resource allocation, improving the efficiency and transparency of philanthropic efforts. When addressing the challenges faced by Mualaf recipients, the study emphasizes the need for a customized approach that considers their unique circumstances and cultural nuances. The proposed application, based on GIS, aims to bridge the gap between traditional Zakat distribution methods and contemporary philanthropy's demands, providing a flexible and inclusive framework. The structured methodology, which includes an extensive literature review and expert validation, lays the groundwork for developing a targeted solution. This research contributes to the ever-changing landscape of philanthropy by advocating for inclusivity, efficiency, and transparency in the processes of Zakat allocation.

Community Engagement through GIS-Driven Zakat Distribution for Mualaf Recipients

The research has revealed an additional dimension, which is that the GIS-powered Zakat distribution model promotes a sense of community engagement and empowerment among Mualaf recipients. The user-friendly interface and accessibility of the application contribute to increased participation and comprehension of the Zakat distribution process. This discovery suggests that integrating GIS technology simplifies administrative aspects and enhances the overall experience for beneficiaries. By promoting inclusivity and empowering Mualaf individuals through a transparent and participatory platform, the GIS-based application establishes a more collaborative and mutually beneficial philanthropic ecosystem. This supplementary layer of community engagement aligns with the evolving dynamics of modern philanthropy, highlighting the significance of involving beneficiaries in decision-making processes related to charitable endeavors.

New Dimensions of GIS-Driven Zakat Distribution

The utilization of GIS in the distribution model of Zakat plays a crucial role in augmenting donor engagement and accountability. By exploiting the capabilities of GIS technology, benefactors acquire real-time insights into the influence of their contributions, thereby cultivating an elevated sense of connection to the process of philanthropy. The application furnishes benefactors with visual representations and updates regarding allocating their Zakat funds, thereby establishing a transparent and traceable trajectory of donations. This discovery implies that GIS revolutionizes the recipients' experience and fortifies the relationship between donors and philanthropic endeavors. The emphasis on donor engagement and accountability positions the GIS-driven Zakat distribution model as a

catalyst for fostering enduring commitment and trust between benefactors and philanthropic initiatives.

CONCLUSION AND RECOMMENDATION

In conclusion, the research highlights the significant potential of Geographic Information System (GIS) technology in reshaping the landscape of Zakat distribution, particularly in meeting the unique needs of Mualaf recipients. A comprehensive examination of the existing literature has strengthened the belief that GIS can serve as a powerful tool, optimizing the allocation of resources and promoting transparency in zakat distributions. The essence of the recommendation lies in developing and implementing a GIS-powered mobile application specifically tailored to address the challenges encountered by Mualaf individuals. This application represents a pragmatic solution to enhance the accuracy and fairness of Zakat distribution.

Moving forward, successful implementation requires collaborative efforts among various stakeholders, including philanthropic organizations, governmental bodies, and local communities. The focus should be on fostering a continuous feedback loop through active community engagement, ensuring that the GIS-powered application remains adaptable to evolving needs. This collaborative approach enhances the sustainability and effectiveness of the philanthropic system. Ultimately, the overarching objective is to establish a more efficient, transparent, and responsive model for Zakat distribution. This addresses the challenges faced by Mualaf communities and contributes to the wider discourse on harnessing technology for societal benefit. By embracing GIS technology in philanthropy, we embark on a journey towards a more equitable and impactful distribution of resources, aligning with the principles of inclusivity and social responsibility.

REFERENCES

Ahmad, T., Md. Ferdausu, R., Tunku, S., Md., A. R., M., N. H., & Abul Bhuiyan, B. (2023). Conceptualization of The Alternative Zakat and Ushr Based Poverty Alleviation and Sustainable Development Model: An Empirical Case Study in Bangladesh. *Accounting and Finance Research*. https://doi.org/doi: 10.5430/afr.v12n3p16

Manaswi, Saha., S., Patil., E., Cho., Evie, (Yu-Yen), Cheng., Chris, H., Devanshi., Chauhan., Rachel Kangas., R., McGovern., A. L., Jeffrey, H. J., E., Froehlich., C., & Horng., Devanshi, C. (2022). *Visualizing Urban Accessibility: Investigating Multi-Stakeholder Perspectives through a Map-based Design Probe Study*.

Maria, G., & Chrysaida-Aliki, P. (2021). *The Role of Visualisation in Spatial Planning: A GIS-Based Approach*. https://doi.org/10.1007/978-981-33-4098-5_15

Omar, P. M. F. F. A., & Hajimin, M. N. H. H. (2023). The Roles of Zakat Towards Maqasid Al-Shariah and Sustainable Development Goals (SDGs): A Case Study of Zakat Institutions in East Malaysia. *International Journal of Zakat*, *8*, 68–81. https://ijazbaznas.com/index.php/journal/article/view/406/153

Rinner, C., & Bird, M. (2009). Evaluating community engagement through argumentation maps - A public participation GIS case study. *Environment and Planning B: Planning and Design*, *36*(4), 588–601. https://doi.org/10.1068/b34084

Rusli, N., & Abdul Kadir, F. K. (2022). The Challenges Encountered by Mualaf After Conversion to Islam: A Study on The Apostasy (Murtad) Cases in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, *12*(8), 538–544. https://doi.org/10.6007/ijarbss/v12-i8/14050

Syukri Jalil, M., Sabri, M., Ghafar, A., Awang, A., & Yusoff, M. (2022). The effectiveness of zakat assistance towards straightening religiosity of Muslim converts (muallaf). *E-Journal of Islamic Thought and Understanding*, *1*, 74–81.

V.A., K., Sergey, S., S., C., G., N., Manya, M., Z, G, K., D, A, O., A., V., T., A.B., A., N., V., M., & Vadim, A. (2022). *Modeling of spatiotemporal data about the environment in GIS*. https://doi.org/10.52419/issn2782-6252.2022.3.43

Wright, D. J., Kouyoumijan, V., & Kopp, S. (2019). *Towards a Community "Playground:" Connecting CyberGIS with Its Communities*. 263–278. https://doi.org/10.1007/978-94-024-1531-5_14

Yu.I., D., A., B., N., & Farida, A. (2022). *Data-Driven Preprocessing of Gravity Data in Oilfield Gis Monitoring System in Kazakhstandata-Driven Preprocessing of Gravity Data in Oilfield Gis Monitoring System in Kazakhstan*. https://doi.org/doi: 10.3997/2214-4609.2022580267