



Empowering Muslim Rural Women through Digital Infrastructure and *Zakat* Community Development in Kahayya, Bulukumba

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ABSTRACT

The empowerment of rural Muslim women represents a strategic issue in sustainable development in Eastern Indonesia, yet studies that simultaneously integrate digital infrastructure transformation with the role of Islamic philanthropy remain extremely limited. This study aims to analyse changes in the socio-economic roles of Muslim women in Kahayya Village, Kindang District, Bulukumba Regency, South Sulawesi, Indonesia, in the context of the introduction of basic infrastructure comprising roads, electricity, and internet access, as well as the presence of BAZNAS's *Zakat* Community Development (ZCD) programme as a community-based Islamic philanthropic instrument. This study employs a qualitative case study design. Data were collected through in-depth interviews with 15 informants, participatory observation across six field visits, and document review of BAZNAS ZCD programme reports. Analysis was conducted thematically using the Gender and Development (GAD) framework brought into dialogue with the *maqasid al-shariah* perspective. The findings reveal that infrastructure transformation significantly drives a shift in women's roles from the domestic sphere toward productive economic participation, improved access to education, and broader social engagement. The BAZNAS ZCD programme demonstrably strengthens this empowerment process through Islamic value-based entrepreneurship mentoring, which not only increases *mustahiq* income but also reinforces women's position in decision-making at the family and community levels. This study concludes that the synergy between digital infrastructure development and Islamic philanthropy constitutes a contextually grounded and sustainable empowerment model for rural Muslim women in Eastern Indonesia, provided it is supported by strengthened digital literacy and adequate cross-sectoral coordination.

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1. INTRODUCTION

Infrastructure is not merely a matter of physical and technical concerns, but rather a determinant of who may participate in economic and public life, and who may not. In remote rural areas of developing countries, the absence of roads, electricity, and internet connectivity not only generates material underdevelopment but also structurally confines women within mutually reinforcing cycles of access deprivation: restricted mobility, restricted information, and restricted economic opportunity (Kabeer, 1999; Moser, 1993).

Empirical evidence from around the world confirms that infrastructure investment directly affects women. Dinkelman (2011) found that a mass electrification programme in South Africa significantly increased women's labour force participation within the first five years following the intervention, primarily by releasing women from the burden of domestic production. Khandker et al. (2009) demonstrated that rural road construction in Bangladesh measurably increased girls' educational enrolment rates and reduced household poverty. Nevertheless, Kim and Standal (2019) caution that access to electricity does not automatically lead to women's empowerment, as the context of gender norms, affordability, and the reliability of infrastructure services determines the extent to which women are genuinely able to benefit from such changes. These findings affirm that infrastructure is a necessary but not sufficient precondition for women's empowerment.

Kahayya Village, situated in Kindang District, Bulukumba Regency, South Sulawesi, is characterized by infrastructural isolation that, for many years, constrained the potential of village women. Located in a mountainous area with steep, hilly terrain, travel time to the district centre reached 90 to 120 minutes via unpaved roads prior to road construction. This condition placed the women of Kahayya within what Chambers (1997) describes as a deprivation trap, namely a multidimensional entrapment in which geographical isolation, limited access to services, and low economic capacity mutually reinforce one another. Kahayya is also recognised as the largest coffee-producing centre in Bulukumba Regency; however, this agricultural potential has not been optimised by village women for many years due to infrastructural barriers that constrain the production chain and market access (Adhikari et al., 2018). The introduction of adequate roads, electricity, and internet connectivity over the past decade has begun to transform this condition in tangible ways.

The literature on the relationship between infrastructure and women's empowerment has expanded considerably, particularly in the areas of electrification (Bera et al., 2024; Dinkelman, 2011) and road construction (Asher & Novosad, 2020; Khandker et al., 2009). Similarly, scholarship on Islamic philanthropy in Indonesia has provided a strong foundation, most notably through Fauzia (2013) work on the history and development of Islamic philanthropy in Indonesia, as well as studies on the role of *zakat* in poverty alleviation (Muthmainnah et al., 2024; Rusydiana et al., 2022). Notwithstanding these contributions, two significant gaps remain. First, studies that explicitly integrate the dimension of rural women's Islamic identity with the dynamics of digital infrastructure transformation remain extremely limited, as research on rural Muslim women in Indonesia has been centred predominantly on gender and Islamic

law (Blackburn, 2004; Robinson, 2008; Van Doorn-Harder, 2008) rather than on infrastructure-based economic empowerment. Second, the role of Islamic philanthropic institutions such as BAZNAS through the *Zakat* Community Development (ZCD) programme as an actor in women's empowerment in remote villages has never been examined specifically in the context of digital infrastructure transformation, despite its highly significant synergistic potential (Anwar et al., 2024; Majid et al., 2024).

Kahayya Village offers a unique and strategically significant case for addressing these gaps. In this village, digital infrastructure transformation and the presence of the BAZNAS ZCD programme occurred within a concurrent timeframe, thereby enabling analysis of how two agents of change, namely state infrastructure and Islamic philanthropy, operate simultaneously in shaping patterns of empowerment among rural Muslim women. The study of an Eastern Indonesian context, which has historically received less scholarly attention than Java in women's empowerment research (Fitriana, 2017; Wijers, 2019), constitutes an additional significant contribution. The findings of this study are expected to contribute not only to academic discourse on gender, Islam, and development but also to the formulation of models for rural women's empowerment programmes that integrate Islamic philanthropic instruments with the digital infrastructure development agenda in Eastern Indonesia.

Based on the identified research gaps, this study aims to: first, analyse how digital infrastructure transformation drives changes in the socioeconomic roles of Muslim women in Kahayya Village, Bulukumba; second, examine the contribution of the BAZNAS *Zakat* Community Development programme as an Islamic philanthropic instrument in the village women's empowerment process; and third, identify the factors that mediate and inhibit the empowerment process within the context of a rural Muslim community in South Sulawesi. These three objectives are analysed using the Gender and Development (GAD) framework developed by Moser (1993), brought into dialogue with the *maqasid syariah* perspective as elaborated in contemporary Islamic development scholarship (Rusydziana et al., 2022; Yusof et al., 2019).

This article is organised into five sections. The first section is the introduction, which establishes the study's context and objectives. The second section outlines the qualitative research methods employed. The third through sixth sections present the findings and discussion, encompassing infrastructure transformation, changes in women's roles, the impacts and challenges of infrastructure development, and the role of Islamic philanthropy through the BAZNAS ZCD programme. The seventh section concludes and articulates the research implications for rural women's empowerment policy in Eastern Indonesia.

2. METHODS

This study employs a qualitative case study design to explore in depth the changes in the socio-economic roles of Muslim women in Kahayya Village, Kindang District, Bulukumba Regency, South Sulawesi, within the context of digital infrastructure transformation and the presence of BAZNAS's *Zakat* Community Development (ZCD)

program. A case study design was selected because it allows the researcher to examine a phenomenon within its real-life context, particularly when the boundaries between the phenomenon and its context are not clearly evident (Yin, 2018). The research site is located in a mountainous area with distinctive geographic, social, and religious characteristics, making Kahayya a representative case for intensive investigation. Fieldwork was conducted over three months, taking into account the cycles of social and economic activities in the village community.

Data were collected through three complementary techniques. First, participatory observation was conducted during six field visits to directly observe women's daily activities, patterns of digital infrastructure use, and social interactions in both domestic and public spaces. Second, in-depth interviews were conducted with 15 informants selected through purposive sampling based on the relevance of their experience to the research focus. Informants comprised eight women entrepreneurs and housewives who had experienced changes in infrastructure access before and after development, two community leaders, two village youth, two BAZNAS village facilitators, and one village official. Each informant was interviewed once or twice, with each session lasting 45 to 90 minutes. Third, a document review was conducted of BAZNAS ZCD program reports, BPS statistical data, and relevant village documents to supplement the primary data.

Data analysis was conducted inductively through three sequential stages. The first stage involved data reduction, including sorting, focusing, and simplifying raw field data. The second stage involved thematic coding to identify recurring and significant themes, covering infrastructure access, economic participation, changes in social roles, the role of Islamic philanthropy, and challenges and obstacles faced by women. The third stage involved interpretation using Moser's (1993) Gender and Development (GAD) framework to map women's practical and strategic gender needs, which is also dialogued with the *maqasid al-shariah* perspective in analyzing the Islamic philanthropy dimension. Data validity was ensured through source triangulation, meaning cross-checking data from interviews, observations, and documents, as well as member checking with key informants to verify the accuracy of the researcher's interpretations.

This study adhered to research ethics principles by obtaining verbal informed consent from all informants prior to interviews, maintaining confidentiality of informants through the use of pseudonyms in data presentation, and ensuring voluntary participation. Given that the majority of informants are women from socio-economically vulnerable groups, the researcher maintained sensitivity throughout the data collection process to avoid placing undue burden or discomfort on participants.

3. RESULTS AND DISCUSSION

Infrastructure Transformation in Kahayya Village

The transformation of infrastructure in Kahayya Village over the past decade has served as a significant catalyst for socio-economic change within the community, particularly among women. The construction of roads, the provision of electricity, and the expansion of internet access have not only reshaped the village's physical landscape but also driven a shift in women's roles and opportunities across various

dimensions of life. More adequate infrastructure has broken down isolation, opened connectivity with the wider world, and strengthened women's capacity to participate in development processes (Chambers, 1997).

Improvement in road access constituted the first and most strategically significant change. Previously, poor road conditions had hindered women's access to education, healthcare, and economic opportunities. Data from the Central Bureau of Statistics (Badan Pusat Statistik, 2021) showed that 60% of women in Kahayya experienced difficulties reaching service centres due to poor road conditions. The improvement of roads has facilitated greater mobility, enabled broader engagement in micro-enterprises such as farming and handicrafts, and expanded the reach of product marketing (Andrianus & Alfatih, 2023). Improved mobility has also facilitated women's participation in community activities and training programmes, consistent with Moser's (1993) view that adequate access to infrastructure can empower women socially and economically.

The introduction of electricity further deepened the impact of this transformation. Access to electrical energy reduced dependence on inefficient and hazardous kerosene lamps while extending women's productive hours. Research by IBEKA demonstrates that access to clean energy creates space for women to develop home-based enterprises (Institute for Essential Services Reform (IESR) & IBEKA, 2012). As an illustrative case, Suarni, a coffee farmer, utilised an electric roasting machine to improve the efficiency and quality of her coffee production, with a direct impact on household income. Electricity also opened avenues for access to modern technology, information media, and production equipment, thereby reinforcing women's roles in the local economy (Subiakto, 2020).

Beyond roads and electricity, internet connectivity emerged as a key factor in expanding women's knowledge and social networks. Internet access enables the search for information on health, education, and entrepreneurial opportunities (Alampay, 2006), and facilitates interactions through social media platforms for sharing experiences and building mutual support. The internet has also introduced online learning opportunities, which are particularly important for women whose mobility is constrained by domestic responsibilities. Modernisation theory holds that access to technology can bring about positive social change and foster self-reliance (Rostow, 1971).

Nevertheless, each form of progress carries its own challenges. Road improvements require strategies for equitable benefit distribution; electricity provision demands a stable, sustainable supply; and internet access necessitates adequate digital skills. For this reason, training programmes, facilitation support, and the provision of renewable energy constitute essential components in ensuring that this transformation is both inclusive and sustainable. Synergy among government, community, and non-governmental organisations is required so that infrastructure development extends beyond physical provision and also strengthens the social and economic resilience of women in Kahayya Village.

Changes in Women's Roles and Lifestyles

The infrastructure transformation in Kahayya Village, encompassing improved internet access, electricity provision, and road network upgrades, has not only altered the village's physical conditions but also driven significant shifts in women's roles and lifestyles. These changes are clearly evident across several dimensions, including the economic, educational and skills development, as well as the social and cultural domains. As connectivity and opportunities have expanded, women in Kahayya are increasingly assuming greater roles in decision-making, community development, and strengthening local social networks.

Economy

Infrastructure improvements in Kahayya Village, particularly in internet access and electricity provision, have opened new opportunities for women to participate in economic activities. A notable example is that many women in the village now utilise online platforms to market their locally produced goods, including handicrafts and agricultural products. Women engaged in technology-based micro, small, and medium enterprises have experienced significant income growth, a finding that aligns with observations by Othariany et al. (2024) that women are generally more realistic and diligent in managing administrative and financial matters, more adaptable, better at building communication with their environment, and more dependable in reporting tasks. These qualities demonstrate that internet access not only enhances women's skills but also provides them with a broader market reach.

Interview data gathered from 10 women entrepreneurs in Kahayya Village revealed that 7 of them are now engaged in online businesses, a significant increase from previous years. The availability of electricity has played a crucial role in this regard, enabling women to use technological devices such as smartphones and computers. Consequently, women in the village have transitioned from mere consumers to active producers in the local economy.

Table 1. Income of Kahayya Coffee SME Beneficiaries

Name of Mustahik	Regency	District	Village	Group Name	Average Monthly Family Income		
					Income Before Intervention	Income from ZCD Program	Income After Intervention
NM	Bulukumba	Kindang	Kahayya	UKM KOPI KAHAYYA	Rp 2,500,000	Rp 1,716,550	Rp 4,216,550
MF	Bulukumba	Kindang	Kahayya	UKM KOPI KAHAYYA	Rp 1,700,000	Rp 1,716,550	Rp 3,416,550
NF	Bulukumba	Kindang	Kahayya	UKM KOPI KAHAYYA	Rp 500,000	Rp 500,000	Rp 1,000,000
S	Bulukumba	Kindang	Kahayya	UKM KOPI KAHAYYA	Rp 400,000	Rp 500,000	Rp 900,000
R	Bulukumba	Kindang	Kahayya	UKM KOPI KAHAYYA	Rp 300,000	Rp 350,000	Rp 650,000

SA	Bulukumba Kindang	Kahayya	UKM KOPI KAHAYYA	Rp 300,000	Rp 300,000	Rp 600,000
MH	Bulukumba Kindang	Kahayya	UKM KOPI KAHAYYA	Rp 1,500,000	Rp 700,000	Rp 2,200,000

Source: Processed Data, 2025

Based on Table 1, the ZCD Program intervention has significantly increased the monthly earnings of all listed *mustahiks* in Kahayya Village. The data shows that beneficiaries such as NM and MF achieved the highest total incomes, reaching Rp 4,216,550 and Rp 3,416,550, respectively, after the intervention. Even for those starting with lower baseline earnings, such as SA and R, the program successfully doubled their income. Overall, the figures in Table 1 demonstrate a positive economic impact, indicating that the SME initiative effectively strengthens the community's financial stability in the Bulukumba Regency.

Based on the data in Table 1, income data collected from Kahayya Village in October 2024, a significant increase in household income is evident following participation in the *Zakat* Community Development (ZCD) programme intervention. Income growth was recorded across all participants, with several *mustahiq* experiencing increases of more than twofold compared to pre-intervention levels. This growth reflects the positive impact of the mentoring programme on strengthening household economic capacity, particularly among women. A concrete illustration of this is the entrepreneurship training programme facilitated by BAZNAS as the accompanying institution. The programme focused on building the capacity of women entrepreneurs to leverage technology for business development. Within six months of the training, participants optimised their marketing and production strategies, resulting in sustained revenue growth. These findings affirm that access to appropriate training and mentoring can reinforce women's contributions to the village economy.

Challenges, however, persist. Although access to technology has improved, not all women possess sufficient understanding of how to utilise it effectively. Accordingly, more comprehensive education and training programmes specifically focused on developing digital skills among women in Kahayya Village are needed, so that they are better positioned to capitalise on existing opportunities and contribute more meaningfully to the local economy.

Education and Skills

Infrastructure improvements in Kahayya Village have also significantly impacted women's access to education. With internet connectivity now available, women in the village can access a wide range of online learning resources. The use of the internet for educational purposes has increased women's participation in higher education (Subiakto & Ida, 2013), particularly in rural areas where access to formal education has historically been limited.

Field data gathered by the researcher indicate that the rate of women's participation in higher education in Kahayya Village increased from 20% to 35% over the past two years. Access to skills training through various digital applications, including Zoom,

has provided women with opportunities to acquire new competencies, ranging from technical skills to personal development. This demonstrates that the internet functions not merely as a communication tool but also as a medium for improving the quality of education and skills.

Interview findings from ten women in Kahayya Village confirm that the internet plays an important role in enhancing their knowledge and capabilities. Beyond this, many women use the internet to find information about available training programmes. For instance, a product processing skills training programme organised by a non-governmental organisation attracted a considerable number of female participants. The programme taught not only the skills required for processing local products but also business management and packaging techniques, competencies highly valuable for those seeking to establish their own enterprises.

In addition to improved information access, better road infrastructure has also produced significant gains. Prior to road improvement, travel time to the nearest market could reach two hours. With adequate road development, that same journey now takes approximately thirty minutes. This change enables women to sell their products more easily and to access healthcare and educational services more promptly.

One concrete manifestation of the skills transformation is evident in processed turmeric products. Previously, turmeric was sold in bulk form at traditional markets. Now, through training and capacity-building, community members have been able to process turmeric using improved techniques, as evidenced by the adoption of more attractive, modern packaging. This innovation not only improves the quality and added value of the product but also strengthens its market competitiveness.



Figure 1. Turmeric Product Packaging

Source: Facebook of Nurmaidah Mansyur

Figure 1 showcases the tangible results of the SME development through professional branding and innovative packaging. The image displays a turmeric-based drink, "KunyitKU," presented in unique, modern bulb-shaped bottles with clear labeling. This high-quality packaging, sourced from Nurmaidah Mansyur's documentation, suggests a strategic approach to increasing the market value and consumer appeal of local products. By combining traditional ingredients with contemporary presentation, the SME group is better positioned to compete in a wider market.

Kahayya Village is home to many inspiring success stories of women who have utilised modern infrastructure to improve their livelihoods. One particularly prominent example is Nurmaidah, a university graduate who returned to her home

village and initially processed coffee using only traditional equipment. With access to electricity and the internet, Nurmaidah began using more efficient coffee processing equipment and started marketing her products through various online platforms, activities that previously could only be conducted offline, constrained by difficult road conditions and requiring considerable courage and capital investment.

Other women in Kahayya Village have also begun establishing small businesses through online sales, such as the Millennial Farm group, which sells local products. A further example is the Tabbuakang women's cooperative, which successfully sells its agricultural produce, including turmeric, through online channels. This development has not only increased their income but has also provided them with greater self-confidence and new business competencies.

Nevertheless, despite improvements in educational access, gaps in the quality of education received by women remain. Many women experienced school dropout during earlier periods when access was severely limited, which has contributed to deficiencies in literacy skills. It is therefore important to ensure that access to quality education is also addressed, so that women in Kahayya Village are fully equipped to maximise the opportunities available to them.

Social and Cultural Dimensions

Infrastructure changes in Kahayya Village have also brought significant social and cultural impacts for women. With internet and electricity access now available, women have considerably more opportunities to participate in social and community activities. The transformation of women's roles within families and broader society is clearly evident, as women are increasingly assuming more active roles in decision-making. This is consistent with gender-based development theory, which holds that access to resources can transform power dynamics within society (Moser, 1993).

Shifts in women's ways of thinking and communication patterns in Kahayya Village are also markedly apparent. Whereas communication was previously largely conducted through traditional means, the internet now enables women to connect with wider communities. They can share experiences, receive support, and collaborate on social projects. For instance, women's groups in the village are now actively engaged in awareness campaigns on the importance of literacy in daily life, which they first encountered through social media platforms and could not previously access due to informational constraints.

Despite this progress, women in Kahayya Village also face challenges in balancing modernity and local cultural traditions. Some women, particularly those approaching adolescence, have become overly absorbed in the features of social media to the point that they neglect their priority responsibilities in favour of digital engagement. It is therefore important to create spaces in which women can express themselves without sacrificing local cultural values.

This balance between modernity and tradition is also reflected in the way women conduct their businesses. They frequently combine modern marketing techniques with traditional products, creating a distinctive synergy. A common example is the

marketing of traditional products through social media, enabling them to reach wider markets without losing their cultural identity.

In this context, support from government and non-governmental institutions is essential in helping women navigate these changes. Programmes that promote cultural preservation while simultaneously encouraging modernisation can support women in Kahayya Village in developing within an enabling environment.

Positive Impacts and Challenges of Infrastructure Development

Infrastructure development in Kahayya Village, including improved electricity, internet, and road access, has generated significant positive impacts on women's lives. One of the most notable outcomes is improved access to healthcare and educational services. According to data from the Central Bureau of Statistics (Badan Pusat Statistik, 2022), villages with electricity and internet access have recorded a thirty percent increase in women's participation in education. This has been facilitated by women's ability to access educational information online and to participate in distance learning, particularly during the pandemic period (Andrianus & Alfatih, 2023).

Internet access has also enabled women to meet household needs through online shopping platforms such as Shopee. Prior to the advent of the internet, women in Kahayya Village were required to undertake lengthy journeys to urban markets to purchase children's supplies, household equipment, and agricultural inputs. Now, using only a mobile phone, they can order goods online and await delivery to the village, albeit with longer waiting times than in urban areas. This development not only saves time but also reduces transportation costs, which have historically constituted a significant constraint for rural women.

Infrastructure development has further increased women's self-confidence in their decision-making capacity. With improved access to information and education, women feel more empowered to participate in decision-making at both the family and community levels. Research indicates that women engaged in education and with access to information tend to be more actively involved in social and economic activities within their communities (Priani, 2022). Digital connectivity offered by the internet has also reduced social isolation. Women in Kahayya Village can now connect with broader communities at both the local and national levels. Through social media, they can share experiences, receive support, and collaborate on community projects, thereby building stronger social networks and enhancing solidarity among women (Moser, 1989).

However, it is important to note that these positive changes have not been uniformly distributed. Some women continue to face difficulties in accessing new technologies, particularly those from economically disadvantaged backgrounds. More intensive training programmes and support mechanisms are therefore needed to ensure that all women in Kahayya Village can fully benefit from infrastructure development.

Although infrastructure development in Kahayya Village has brought considerable benefits, challenges have also emerged alongside these changes. One of the primary challenges is women's adaptation to new technologies. Not all women possess the educational background required to understand and effectively utilise information

and communication technology (ICT). This is consistent with the findings of (Andrianus & Alfatih, 2023), who reported that approximately 40% of women in the village experienced difficulties using digital devices such as smartphones and computers.

The risk of socio-cultural change also warrants attention. Infrastructure development frequently introduces new values that can affect local traditions and norms. For example, with increased exposure to global information, some women may be influenced by differing perspectives on gender roles, which can create tensions between traditional and modern values, potentially disrupting social equilibrium in the village.

Gender inequality remains a persistent challenge despite improvements in infrastructure. Although access to education and healthcare has improved, women continue to be constrained by traditional household roles. Data indicate that, despite greater educational access, women's participation in formal economic activities remains low, at approximately 25% of the total female workforce. This suggests that while infrastructure provides a necessary foundation, shifts in mindsets and cultural norms remain essential for the full empowerment of women.

Although physical infrastructure comprising roads, electricity, and internet connectivity has become increasingly available in Kahayya Village, access to these facilities does not in itself guarantee increased women's participation. The most critical challenge lies in the limitations of literacy, education, and the skills required to use technology productively. A gender-equitable development approach must therefore go beyond the mere provision of physical infrastructure and address the strategic dimension of building women's capacity to access, control, and make decisions over available resources. In this context, the Gender and Development (GAD) framework provides an important reference point for designing programmes that are genuinely responsive to the needs and real conditions of women in remote areas.

In addressing these challenges, it is important for the government and relevant institutions to collaborate with local communities to design programmes that effectively support women. Through a collaborative and locally contextualised approach, women in Kahayya Village will be better positioned to utilise existing infrastructure to improve their overall quality of life.

There is also a need to ensure that all women, including those from marginalised groups, have equal access to technology and education. Programmes directed at women's empowerment must be more inclusive and take into account the specific needs of diverse groups of women within the village. For instance, technology training tailored to the comprehension levels and practical needs of rural women can help address these disparities (Suhardi, 2019).

Table 2. GAD Framework: Women's Empowerment in Kahayya Village

Component	Description
Root Causes	Women continue to face multiple structural challenges, including low digital literacy, limited access to devices, inadequate participation in development planning processes, insufficient self-confidence, and difficulties in adapting to the pace of technological change.
Needs	Women's needs are categorised into two dimensions. Their practical needs encompass daily necessities such as technological devices, skills training, internet access, and energy sources. Their strategic needs, by contrast, encompass the conditions required for greater autonomy, meaningful participation in decision-making processes, and social recognition of their contributions within the community.
Programme	A multi-level approach is adopted by combining empowerment strategies at the individual, community, and institutional levels through the following measures: (1) community-based digital literacy and entrepreneurship training to strengthen women's capacity to use technology and develop independent enterprises; (2) the promotion of women's leadership and their inclusion in inclusive village deliberation forums, ensuring that women have substantive space in public decision-making; and (3) the utilisation of environmentally friendly technology alongside community-based internet access development, to ensure that women in remote areas are connected and can participate actively in digital transformation.
Stakeholders	Village government, relevant agencies (Ministry of Communication and Information Technology, Micro and Small Enterprise Agency, Women's Empowerment and Child Protection Agency), local non-governmental organisations and volunteers, as well as PLN, IndiHome, and BAZNAS.
Expected Outputs	The creation of an enabling environment that encourages women to access technology more readily, pursue economic opportunities, and contribute actively to community development.

Source: Processed Data, 2025

Table 2 outlines a comprehensive strategy to address gender disparities and enhance women's roles within the community. The framework identifies Root Causes of inequality, such as low digital literacy and limited access to technology, which hinder women's participation in development. To address these, the Programme adopts a multi-level approach that includes digital entrepreneurship training, promoting women's leadership in village forums, and developing community-based internet access. Supported by various Stakeholders—including BAZNAS, local government, and telecommunications agencies—the Expected Outputs of this framework aim to create an enabling environment in which women can easily access economic opportunities and actively contribute to the digital transformation of Kahayya Village.

The GAD framework presented above provides a comprehensive picture of the barriers, needs, and empowerment potential of women in Kahayya Village. By distinguishing between practical and strategic gender needs, the framework demonstrates that meaningful advocacy extends well beyond the provision of tools, such as digital devices and introductory access, and must engage women in their social roles and community functions. Cross-sectoral collaboration is equally essential, requiring government, non-governmental organisations, the private sector, and local communities to work in concert. This collaborative imperative is consistent with the principles of GAD, which position equity and participation as the foundation of development. Within this framework, women are not merely passive occupants of development space but are recipients and active agents of change within empowerment processes. The implementation of this framework is expected to yield meaningful outcomes, including broader improvements in women's digital literacy, enabling them to access information and economic opportunities, active participation in decision-making that affirms the importance of women's voices being heard, and the utilisation of environmentally friendly energy that simultaneously advances sustainable gender equality.

This framework is not confined to application in Kahayya alone. It can be adapted by other remote villages facing similar circumstances, serving as a foundation for the formulation of more contextually grounded and equitable women's empowerment policies and programmes.

The Role of Islamic Philanthropy in Rural Women's Empowerment: An Analysis of the BAZNAS *Zakat* Community Development Programme in Kahayya

Zakat as an Instrument of Social Empowerment in Islam

Islamic philanthropy constitutes one of the fundamental pillars of the Islamic socio-economic system, extending well beyond the domain of ritual obligation. Within the Islamic scholarly tradition, *zakat*, *infaq*, and *sadaqah* are understood as mechanisms of social redistribution directed at realising economic justice and protecting vulnerable groups within society (Fauzia, 2017). This understanding is rooted in the concept of *maqasid al-shariah*, particularly the dimensions of *hifz al-nafs* (the preservation of life) and *hifz al-mal* (the preservation of wealth), which position poverty alleviation and the

empowerment of marginalised groups as integral to the broader mission of Islamic law (Dirie et al., 2024).

Recent developments in the study of Islamic philanthropy indicate a paradigmatic shift from conventional charitable approaches toward a more transformative empowerment orientation, commonly referred to as *tamkin*. In their study of *zakat* recipients in Indonesia, Lessy et al. (2020) found that beneficiaries do not merely seek immediate material assistance but place considerably greater value on programmes that enable them to achieve long-term economic self-sufficiency. This finding is consistent with the argument advanced by Baidhawiy (2015), who contends that contemporary Islamic philanthropic institutions in Indonesia, including BAZNAS and Lazismu, have undergone significant institutional transformation toward more systematic and measurable community-based empowerment models.

In the context of women specifically, Islamic philanthropy holds untapped potential. Muthmainnah et al. (2024) document how *zakat* programmes designed specifically for vulnerable women in Indonesia can function simultaneously as effective instruments of both protection and empowerment. Furthermore, Anwar et al. (2024) demonstrate that women *zakat* beneficiaries (*asnaf*) engaged in Islamic value-based entrepreneurship programmes exhibit higher rates of business success than those in comparable secular programmes, as the spiritual dimension and embedded Islamic values strengthen participants' motivation and commitment.

The BAZNAS ZCD Programme as a Community-Based Islamic Philanthropy Model in Kahayya

The presence of BAZNAS through the *Zakat* Community Development (ZCD) programme in Kahayya Village is among the most contextually relevant implementations of community-based Islamic philanthropy in remote village settings of Eastern Indonesia. The programme does not operate in isolation but works in synergy with the ongoing infrastructure transformation, making Kahayya a tangible laboratory for the intersection of physical modernisation and Islamic value-based empowerment.

Mustahiq income data collected in this study show significant income increases across all ZCD programme participants following the intervention, with several beneficiaries recording income growth of more than twofold compared to pre-programme levels. These findings are consistent with results reported by Widiastuti et al. (2021), who demonstrated that *zakat*-based empowerment programmes supplemented by business growth mentoring significantly improve *mustahiq* welfare in Indonesia. The key to this success lies not solely in the transfer of funds but in the combination of capital support, skills training, and sustained mentoring that characterises the ZCD model.

The BAZNAS approach in Kahayya also reflects the spirit of Muslim community-based economic zone development, as analysed by Majid et al. (2024) in the Malaysian context, referring to a model in which *zakat* institutions function not only as fund distributors but also as facilitators of community economic networks. In a Kahayya context that now has internet and electricity access, the digital entrepreneurship training facilitated by BAZNAS opens opportunities for women beneficiaries to

integrate Islamic values into modern business practices, from honesty in online marketing (*amanah*) to collective solidarity within cooperatives (*ta'awun*). This is consistent with the findings of (Thaidi et al., 2024), who found that zakat-based financial institutions integrating spiritual dimensions with practical mentoring are demonstrably more sustainable and well-received within Muslim communities.

Programme sustainability is further reinforced by community trust in BAZNAS as a legitimate Islamic institution. In his study of informal giving within Muslim communities, Woodward (2022) demonstrates that religious trust, grounded in religious identity, constitutes a particularly powerful form of social capital in encouraging Muslim community participation in *zakat*-based programmes. In Kahayya, this trust serves as a catalyst, accelerating women's adoption of the programme, particularly for those who, within the prevailing cultural context, may have had limited prior engagement with secular government programmes.

The Interaction between Muslim Identity, Infrastructure, and Women's Empowerment

Women's empowerment in Kahayya cannot be understood solely through the lens of physical infrastructure. It occurs within the context of a Muslim community that holds a system of values, social norms, and Islamic institutional networks that permeate every aspect of daily life. The Islamic identity of women in Kahayya is not merely a demographic background characteristic; it is a source of meaning, motivation, and boundaries that actively shape how they respond to the changes brought about by infrastructure modernisation.

Robinson's (2008) study of the relationship between gender, Islam, and democracy in Indonesia demonstrates that Indonesian Muslim women have historically developed adaptive strategies that enable them to participate actively in public life while simultaneously maintaining their Islamic identity. A comparable dynamic is evident in Kahayya, where women such as Nurmaidah and members of the Tabbuakang cooperative utilise digital technology to develop their enterprises without abandoning the communal values rooted in Islamic ethics. This is consistent with Ismah's (2016) findings that Indonesian Muslim women possess the capacity to build community authority grounded in Islamic values that strengthens, rather than weakens, their roles in development.

The role of the BAZNAS ZCD programme in this context is particularly strategic because it functions as a bridge between deeply rooted Islamic values and the demands of modernity introduced through digital infrastructure. Islam (2020), in a study on the role of Islamic microfinance in women's empowerment in Bangladesh, found that Muslim women who access Islamic value-based services demonstrate higher levels of self-efficacy and are more actively engaged in household economic decision-making. A similar pattern is discernible in the data from this study, where women in Kahayya participating in the BAZNAS ZCD programme report not only increased income but also a transformation in their position within family and community decision-making.

Furthermore, the Gender and Development (GAD) framework that forms the analytical foundation of this study finds renewed relevance when brought into dialogue with the Islamic perspective on gender justice, or '*adalah*'. Tasbih et al. (2024), in their study of Islamic feminism in Makassar, which is geographically proximate to Bulukumba, demonstrate that approaches to gender justice in the context of South Sulawesi's Islam do not simply follow Western feminist constructions but have developed from within a rich local Islamic tradition. This understanding enriches the GAD analysis by adding a contextual dimension more appropriate to rural Muslim communities in Eastern Indonesia. Kabeer (1999) affirms that sustainable empowerment requires simultaneous change at three levels, namely resources, agency, and achievements; and all three levels are demonstrably present in the BAZNAS ZCD programme in Kahayya when analysed through a lens that integrates GAD with local Islamic perspectives.

Limitations and Challenges of Islamic Philanthropy in the Context of Remote Villages

Although the impact of the BAZNAS ZCD programme in Kahayya is demonstrably positive, it is important to acknowledge critically that Islamic philanthropy in the context of remote villages also faces structural limitations that cannot be overlooked. Recognising these limitations, in fact, strengthens the academic relevance of this study and opens the way for a more comprehensive research agenda.

The first challenge concerns sustainability, which represents a central issue in *zakat*-based programmes. In a systematic review of Islamic social finance in relation to the Sustainable Development Goals, Dirie et al. (2024) found that one of the most significant weaknesses of community-based *zakat* programmes is their dependence on fluctuating annual *zakat* collection cycles, which can create uncertainty for beneficiaries. In Kahayya, this risk is compounded by geographical isolation, which limits and costs field facilitators' access.

The second challenge is the programme's limited reach, which represents a tangible constraint. Umar et al. (2022) caution that the potential of Islamic social finance to address poverty in Muslim communities requires a robust institutional ecosystem, including coordination among *zakat* institutions, village government, and local Islamic civil society organisations. Without adequate cross-sectoral coordination, the programme's impact tends to be fragmented and unevenly distributed among women with differing levels of vulnerability.

The third challenge concerns the digital literacy gap among women beneficiaries, which the ZCD programme has not yet fully addressed. Setiansah et al. (2024) found that rural women in Indonesia generally face layered barriers to adopting digital technology, ranging from low foundational literacy to social norms that restrict their access to devices and networks. *Zakat*-based empowerment programmes that do not explicitly integrate digital literacy components risk widening, rather than narrowing, this gap over the long term.

Addressing these limitations requires what Bin-Nashwan et al. (2023) term *Zakatech*, referring to the integration of digital technology into *zakat* management and distribution, which would enable institutions such as BAZNAS to extend their reach,

enhance transparency, and optimise programme impact in a more systematic manner. In a Kahayya context with internet access, the adoption of a Zakatech approach by BAZNAS opens highly promising opportunities to overcome the operational constraints that have historically been the primary barrier to effective programme delivery in remote areas.

4. CONCLUSION

This study yields three interrelated principal findings that collectively illuminate the dynamics of rural Muslim women's empowerment in Kahayya Village as shaped by digital infrastructure transformation and the presence of Islamic philanthropic programming.

First, the digital infrastructure transformation comprising road construction, electricity provision, and the expansion of internet access in Kahayya Village has driven a tangible and measurable shift in the socio-economic roles of rural Muslim women. Women who were previously confined to domestic roles are now actively engaged in productive economic activities through online enterprises, the processing of value-added local products, and participation in broader market networks. Internet access has opened educational and skills training opportunities previously beyond their reach, while road improvements and electricity availability have extended women's productive hours and expanded their mobility. These findings affirm that infrastructure functions as a structural prerequisite that creates the conditions for women to transition from meeting practical gender needs toward the fulfilment of strategic gender needs, as conceptualised within the Gender and Development (GAD) framework.

Second, the BAZNAS *Zakat* Community Development (ZCD) programme has made a significant and distinctive contribution to women's empowerment in Kahayya as a community-based Islamic philanthropic instrument. The programme's approach, which combines capital support, Islamic value-based entrepreneurship training, and sustained mentoring, has produced *mustahiq* income gains that go considerably beyond mere financial transfer, simultaneously strengthening women's motivation, self-confidence, and position in decision-making at the family and community levels. Community trust in BAZNAS as a legitimate Islamic institution constitutes social capital that has accelerated programme adoption and encouraged the participation of women who previously had limited engagement with secular development programmes. This demonstrates that Islamic philanthropy is not simply a charitable instrument but a transformative empowerment agent of genuine relevance to rural Muslim women in Eastern Indonesia.

Third, the Islamic identity of women in Kahayya functions as a determining mediating factor in the empowerment process rather than a neutral demographic background. Women in Kahayya do not receive modernity passively but actively negotiate it through deeply rooted Islamic values, producing a distinctive, contextually grounded pattern of empowerment. The synergy between digital infrastructure as a material enabler and the BAZNAS ZCD programme as a value-based enabler has proven more effective than either intervention alone, as both operate on complementary dimensions, namely women's technical capacity and their

moral-spiritual capacity. Nevertheless, limitations in digital literacy, the uneven reach of the programme, and dependence on annual *zakat* collection cycles constitute structural barriers that necessitate strengthened cross-sectoral coordination and the adoption of a *Zakatech* approach to enable the sustained and inclusive development of rural Muslim women in Kahayya.

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