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Factors Supporting Community Participation In Waste Management As An Additional Source Of Income

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Abstract

This study examines how environmental literacy, Islamic Social Entrepreneurship (ISE), community support, and policy socialization impact community participation in waste management at TPS-3R Tambakrejo, Waru, Sidoarjo. Using a descriptive quantitative approach with 162 respondents and SEM analysis, the study finds that environmental literacy does not significantly influence participation (t=0.257, p=0.798). However, ISE positively impacts participation (t=1.877, p=0.016), while community support (t=4.624, p=0.000) and policy socialization (t=2.719, p=0.007) have significant positive effects. These findings highlight the need for strategies that leverage ISE, community support, and effective policy socialization to improve waste management participation based on Islamic finance principles. These findings provide valuable insights for policymakers, practitioners, and researchers in developing effective strategies to enhance community participation in waste management programs based on Islamic finance principles that emphasize sustainability, social justice, and economic welfare.

Keywords: Environmental Literacy, Islamic Social Entrepreneurship, Community Support, Policy Socialization, Community Participation

INTRODUCTION

Waste management in Indonesia represents a serious challenge facing the country. According to the report by Nurfadillah. I et al. (2023), the rapid population growth and urbanization have led to a significant increase in waste volume. A major issue is the lack of adequate waste management infrastructure in many areas, especially in large cities. Limited waste processing facilities result in substantial amounts of waste being

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illegally dumped into rivers, vacant land, and other public places. Additionally, there remains a gap in public awareness regarding the importance of responsible waste management. Plastic waste is a particular concern in Indonesia, with high consumption of single-use plastics and a lack of effective recycling systems. The impacts of waste management problems are severe, including environmental pollution, disruptions to local communities, and increased health risks. Although the government has taken various steps to improve waste management, greater efforts are needed, including investment in waste management infrastructure, public education, and stricter regulations on waste reduction and management.

Waste management is not only an environmental responsibility but also a crucial part of a sustainable economic cycle. The concept of recycling and utilizing waste as a valuable resource allows new industries to develop, such as paper, plastic, metal, and glass recycling. Research by Adawiyah & Ramadhan (2020) and Nurfadillah. I et al. (2023) explains that energy recovery from waste, such as waste-to-energy and biogas production from organic waste, is also gaining interest. Furthermore, community participation in waste utilization efforts is significant and important. The community should be actively involved in waste management and recycling programs, such as source separation, waste collection, and household waste management. According to Tarigan et al. (2020), the community plays a crucial role in generating and managing waste, thus also having a key role in changing consumption patterns, waste management behavior, and awareness of waste reuse. A notable example of community-based waste management is the "Waste Bank" program, which engages the community in collecting, sorting, and processing waste into raw materials that can be sold or recycled. Participation in the Waste Bank program not only helps reduce the amount of waste sent to landfills but also creates new economic opportunities and jobs (Chang, 2015).

Waste management is both an environmental responsibility and a vital component of a sustainable economic cycle (Chang, 2015). The community must actively engage in waste management and recycling programs, such as source separation, waste collection, and household waste management (Lacy & Rutqvist, 2015). Several studies show that the effectiveness of waste management programs heavily depends on the level of community participation. Community involvement is crucial not only for efficient waste collection but also for proper sorting and processing (Adawiyah & Ramadhan, 2020); (Mayasari et al., 2020).

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waste management and recycling programs, such as source separation, waste collection, and household waste management (Lacy & Rutqvist, 2015). Several studies show that the effectiveness of waste management programs heavily depends on the level of community participation. Community involvement is crucial not only for efficient waste collection but also for proper sorting and processing (Adawiyah & Ramadhan, 2020); (Mayasari et al., 2020).

Environmental literacy is also a key factor in fostering community participation and innovation in waste management. Environmental literacy helps the community understand the importance of sustainable waste management practices, including waste separation, reduction, and wise waste handling (Indrawijaya & Isnaeni, 2020). The concept of Islamic Social Entrepreneurship (ISE) can also contribute to the effectiveness of the TPS-3R program. ISE can help strengthen the sustainability and positive impact of the program in the long term. Thus, environmental literacy and ISE have the potential to mutually reinforce each other in enhancing the effectiveness of the TPS-3R program (Hati, 2023).

In the context of Tambakrejo, a village located in the Waru District of Sidoarjo Regency, East Java Province, Indonesia, with a population of 18,609 and 6,777 households as of 2020, the environmental conditions are particularly relevant. Tambakrejo has a tropical climate with high rainfall (2,717 mm), high humidity (78-82%), and a warm average temperature (26.3°C). The village's low altitude (5 meters above sea level) and its high rainfall make it well-suited for rice cultivation, contributing to its status as a major rice production center in Sidoarjo. Approximately 35.71% of the village's population works as farmers, highlighting the community's strong connection to agricultural activities. This context underscores the importance of integrating environmental literacy and ISE into waste management strategies in Tambakrejo, as these approaches can enhance the effectiveness of local waste management programs and support sustainable agricultural practices.

The basic concept of this research refers to the study object of the TPS 3R program, which aligns with Islamic principles in conducting businesses that have a positive social impact. Principles such as justice, sustainability, and social responsibility can motivate communities to engage in the TPS 3R program as part of their responsibilities as Islamic Social Entrepreneurs concerned with the environment (Chrysnaputra, 2021). This research differs from previous studies by evaluating the success of the TPS 3R program in Tambakrejo, understanding community awareness of environmental issues through environmental literacy, and exploring the potential of

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Islamic Social Entrepreneurship based on Islamic values through ISE, community support, and policy socialization related to waste management in Sidoarjo Regency.

The novelty of this research lies in its multidimensional approach that integrates environmental literacy, Islamic Social Entrepreneurship (ISE), community support, and policy socialization as key variables. This approach offers a comprehensive framework for evaluating community participation in the TPS 3R (Reduce, Reuse, Recycle) program in Tambakrejo, Sidoarjo. The research uniquely examines how environmental literacy, the potential of ISE, community support, and policy socialization influence community participation in waste management. This study has significant implications for Islamic finance, as ISE can be a strategy to enhance community participation in sustainable and inclusive waste management programs. In the context of Islamic finance, ISE can help improve social and environmental welfare through an approach based on Islamic values. Therefore, this research is expected to contribute to the development of more inclusive and sustainable Islamic finance. By integrating these dimensions, the research offers a novel approach to addressing waste management challenges and proposes practical solutions for enhancing community participation in waste management programs.

LITERATURE REVIEW

Environmental Literacy on Community Participation

Environmental literacy plays a crucial role in enhancing community participation in waste management at TPS-3R Tambakrejo Waru Sidoarjo. Through a better understanding of the negative impacts of waste on the environment and health, the community becomes more aware of the importance of sustainable waste management practices. Annashr et al. (2023) state that good environmental literacy helps the community see the long-term benefits of responsible waste management, motivating them to participate more actively. Education and information provided on waste separation, reduction, and recycling can encourage the community to be more involved in the TPS-3R program. This increased participation is essential, as community involvement is a significant factor in the success of waste management programs (Ayu et al., 2016).

It can be stated that high levels of environmental literacy among community members in TPS-3R Tambakrejo Waru Sidoarjo will increase their participation in waste management activities. Environmental literacy increases understanding of the negative impacts of waste on the environment and health, making people more aware of the importance of sustainable waste management practices. Annashr et al. (2023) showed

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that good environmental literacy helps people see the long-term benefits of responsible waste management, motivating them to be more actively involved. Education and information about sorting, reducing, and recycling can further encourage community participation in the TPS-3R program, as community participation is a key factor in the success of waste management programs (Ayu et al., 2016).

The hypothesis proposed is that environmental literacy has a positive impact on community participation in waste management at TPS-3R Tambakrejo Waru Sidoarjo.

Islamic Social Entrepreneurship on Community Participation

Islamic Social Entrepreneurship (ISE) provides a framework based on Islamic values such as justice, sustainability, and social responsibility, which can encourage community participation in waste management at TPS-3R Tambakrejo Waru Sidoarjo. According to Idris et al. (2022), ISE teaches the importance of running businesses that not only seek profit but also provide social and environmental benefits. By promoting these values, ISE can inspire the community to participate more actively in the TPS-3R program, seeing it as part of their responsibility to protect the environment in line with Islamic teachings. Community participation is crucial, as it fosters a sense of ownership and accountability towards waste management efforts (Tarigan et al., 2020).

It can be stated that the principles of Islamic Social Entrepreneurship (ISE) will increase community participation in waste management at TPS-3R Tambakrejo Waru Sidoarjo. ISE, based on values such as justice, sustainability, and social responsibility, promotes the importance of running businesses that provide social and environmental benefits in addition to profits. Idris et al. (2022) argue that by promoting these values, ISE can inspire people to be more actively involved in the TPS-3R program, seeing it as part of their responsibility to protect the environment according to Islamic teachings. Increasing community participation fosters a sense of ownership and responsibility for waste management efforts (Tarigan et al., 2020).

The hypothesis proposed is that Islamic Social Entrepreneurship (ISE) has an impact on community participation in waste management at TPS-3R Tambakrejo Waru Sidoarjo.

Community Support on Community Participation

Community support is a key factor in enhancing community participation in TPS-3R Tambakrejo Waru Sidoarjo. When the community feels supported by their peers, they are more likely to participate in waste management activities. Chatra et al. (2024) found

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that this support can come in the form of providing facilities and resources, training, and awareness campaigns involving all community members. A strong and supportive community creates a conducive environment for active participation in the TPS-3R program, thereby increasing the effectiveness of waste management in the area. Effective community support systems are known to enhance collective action in waste management initiatives (Prawisudawati et al., 2024).

It can be stated that greater community support will increase community participation in waste management activities at TPS-3R Tambakrejo Waru Sidoarjo. When community members feel supported by their peers, they are more likely to actively participate in waste management activities. Nur Aini & Nur Asma (2020) found that community support can be given through facilities, resources, training, and awareness campaigns involving all community members. A supportive community environment fosters active participation in the TPS-3R program, thereby increasing the effectiveness of waste management in the area. An effective community support system increases collective action in waste management initiatives (Prawisudawati et al., 2024).

The hypothesis proposed is that community support has an impact on community participation in waste management at TPS-3R Tambakrejo Waru Sidoarjo.

Policy Socialization on Community Participation

Policy socialization plays an important role in enhancing community participation in waste management at TPS-3R Tambakrejo Waru Sidoarjo. Through effective socialization, the community can better understand the goals, benefits, and ways to participate in the TPS-3R program. According to Handayani & Agus Salim (2023), clear and accessible information about waste management policies can help the community understand their role and the importance of their contribution to the program's success. Good socialization can also address barriers that the community may face in participating, such as lack of information or understanding of proper waste management procedures. Informing and engaging the community through policy socialization has been shown to significantly enhance participation and compliance in waste management practices (Nugrahani et al., 2019).

It can be stated that effective policy socialization will increase community participation in waste management at TPS-3R Tambakrejo Waru Sidoarjo. When policies are well-socialized, people can better understand the goals, benefits, and ways to participate in the TPS-3R program. Handayani & Agus Salim (2023) state that clear and accessible information about waste management policies helps people understand their

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role and importance of their contribution to the success of the program. Good socialization can overcome obstacles faced by communities, such as lack of information or understanding of correct waste management procedures. Informing and involving people through policy socialization can significantly increase participation and compliance with sustainable waste management practices (Nugrahani et al., 2019).

Therefore, the hypothesis proposed is that policy socialization has a positive impact on community participation in waste management at TPS-3R Tambakrejo Waru Sidoarjo.

Research Methodology

This research is a quantitative study that aims to explain a certain phenomenon by using statistics as a tool to collect and analyze numerical data. This quantitative method uses a hypothetical model as a basis to provide solutions to the problems that have been formulated. This approach aims to provide a clear and accurate depiction of the conditions or characteristics of the variables being studied without manipulating or controlling the variables themselves (Creswell, 2014). In this research on the effectiveness of the TPS-3R program in Tambakrejo Waru Sidoarjo, the population of this study consists of all residents living in that area, numbering 240,674 (Sidoarjo Regency Statistics Office), but the intended participants are those involved in the TPS-3R program. Since all 162 residents are involved in TPS-3R activities, taking the entire population can be a suitable option in a situation where the population is relatively small, easily accessible, or when accuracy and precision in analyzing the entire population are considered important (Creswell, 2014).

In this study, data was collected using a Likert scale questionnaire. The Likert scale is a measurement tool used to measure attitudes, opinions, or perceptions of an individual towards a topic or statement. This scale consists of a series of statements or items, each followed by a range of answer options, such as agreement or disagreement, or intensity levels from strong agreement to strong disagreement.

Data analysis was conducted using descriptive statistics methods, which are used to describe or summarize quantitative data. The main goal of descriptive analysis is to provide a clear and concise picture of the main characteristics of the data collected. In this study, descriptive analysis used central tendency measures, including mean (average) and position measures using percentiles (percentile), which divide data into 100 equal parts. Furthermore, a path analysis using Structural Equation Modeling (SEM) with Partial Least Squares (PLS) was conducted. This method is often used to analyze

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the relationships between latent variables. The significance of Path Coefficients (Path Coefficients) in determining the results of SEM PLS analysis in this study refers to Dulyadi's opinion (2021), which uses bootstrapping to obtain t-statistics and p-values, namely $t > 1.96$ or $p < 0.05$ indicating significant relationships. Additionally, Musyaffi, Khairunnisa, and Respati (2021) explained that coefficient determinants are used to explain the magnitude of effective contributions and factors that have an impact on each other. Structural Equation Modeling (SEM) is a statistical method used to analyze the relationships between variables, while Partial Least Squares (PLS) is a specific algorithm used in SEM to estimate the relationships between variables.

RESULTS AND DISCUSSION

From the data, it was found that 30% of the respondents are men and 27% are women who work in the agricultural sector, followed by 20% of men working in the trade or UMKM sector, and 21% of women working as school teachers. Additionally, it was also found that the background of the respondents has various professions, including private employees, government employees (ASN), BUMD employees, TNI personnel, and some retirees and students. It can be said that most of the respondents are from the agricultural sector, then traders, teachers, company employees, and students or young people who are not yet working.

The analysis on the environmental literacy scale showed that most respondents gave responses consistent with the indicators of knowledge. For example, 48.2% of respondents agreed that understanding how nature works and environmental problems helps them realize the importance of preserving the earth. However, responses to critical thinking skills in finding solutions to environmental issues (28.6%) and attitude towards environmental protection to protect and preserve nature (35.1%) showed a lower level of agreement. Similarly, responses to daily environmentally friendly actions as a form of responsibility towards the earth (28%) also showed a lower level of agreement. This analysis reflects variations in perceptions and understanding of environmental literacy among community members and provides a picture of areas that can be improved in education and environmental awareness.

Most respondents gave positive responses to waste management following Islamic economic principles. For example, 44% of respondents stated that the principle of fairness in dividing benefits, protecting the environment, and reducing resource waste is very consistent with waste management. In addition, 47% of respondents believed that involving and empowering local communities, especially those who are marginalized, in

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decision-making and activity implementation is an effective approach. Furthermore, 46.4% of respondents saw that approaching waste management using technology and innovation that is consistent with Islamic principles and providing positive social impact as a suitable step. In addition, 45.2% of respondents supported efforts to focus on sustainable economic, social, and environmental development in accordance with Islamic principles. This analysis shows that approaches based on Islamic values in waste management receive significant support from the community, indicating awareness and acceptance of these principles in maintaining the environment and sustainability. Most respondents gave positive responses to various types of social support provided by social structures such as RT/RW administrators, community organizations or religious organizations, and other communities. For example, 32.7% of respondents felt that RT/RW administrators provided significant practical support in administration, security, and provision of public facilities, which contributed to strengthening the community as a whole. Furthermore, 44.6% of respondents saw that community organizations or religious organizations provided support through social assistance programs, spiritual support, and information about social services and religious services, which was considered important for supporting community needs. More than half of the respondents (50%) observed that support from other communities formed a wide network that facilitated resource exchange, information exchange, and social support in various forms, which had a positive impact on community unity and well-being as a whole.

The data showed that most respondents gave positive responses to important aspects of waste management policy dissemination and implementation. For example, 54.2% of respondents stated that the effectiveness of policy dissemination depended on clarity and accuracy of communication to the community, as well as how well they understood policy messages. This shows that clarity and accuracy of communication are crucial in ensuring policy messages about waste management reach the community effectively. Additionally, 50% of respondents believed that using social media platforms, government websites, workshops, and public campaigns could increase their awareness and understanding of waste management policies. This shows that utilizing various communication platforms can be effective in increasing knowledge and participation among community members related to environmental policies.

Furthermore, respondents also emphasized the importance of active involvement and commitment from government officials at various levels in preparing, implementing, and publishing waste management policies. About 38.1% of respondents stated that active involvement was very important; another 38.1% said it was important. This shows

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that support and commitment from local government officials are crucial for the success of waste management policy implementation.

Community participation is known to be around 44.6% of respondents who stated they were directly involved in decision-making processes related to programs in their area, including planning, setting goals, selecting strategies, allocating resources, procedure implementation, and monitoring progress. About 38.1% of respondents stated they contributed to program implementation; some respondents (32.1%) felt their contribution was suitable enough. Around 44% of respondents claimed to play a role in monitoring and evaluating program progress to ensure goal achievement and identify problems or challenges during implementation. Around 43.5% of respondents actively utilized results from implemented programs with the aim to ensure program benefits were maximized without any wastage. The data shows that most respondents are actively involved at various stages of program management processes in their area; however it also highlights variations in levels of contribution and perception towards their effectiveness as participants.

The Structural Equation Modeling (SEM) model using the Partial Least Squares (PLS) method is a model that describes the relationships between hypothesized variables. This model consists of two main parts, namely the measurement model and the structural model. The process of testing the structural model is determined as follows.

Table 1. Outher Loading Value

Indicator	Outer Loadings
X1.1. Knowledge	0,636
X1.2. Cognitive Skills	0,809
X1.3. Attitude	0,833
X1.4. Responsible Behavior towards the Environment	0,793
X2.1. Islamic Economic Approach	0,870
X2.2. Technology and Innovation Use	0,896
X2.3. Community Empowerment	0,882
X2.4. Sustainability Initiative	0,893
X3.1. Support from RT/RW Officials	0,789
X3.2. Support from Community or Religious Organizations	0,923
X3.3. Support from Other Communities	0,904

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X4.1. Information Dissemination about Policy	0,880
X4.2. Communication about Waste Management Policy	0,882
X4.3. Government Official Involvement	0,753
Y.1. Participation in Decision-Making	0,804
Y.2. Participation in Program Implementation	0,870
Y.3. Participation in Monitoring and Evaluation	0,899
Y.4. Participation in Utilizing Outcomes	0,924

Using Partial Least Squares Structural Equation Modeling (PLS-SEM) structural model, the outer loadings of the indicators are evaluated as part of the assessment of the quality and validity of the latent constructs (variables). It is necessary that the indicators used are reliable, which can be tested by looking at the outer loadings of the indicators (ideally > 0.7). However, in this study, indicator X1.1 obtained a value less than 0.7 (0.636), which was still used. Furthermore, the results of the reliability test using SMART PLS yielded the following values:

Table 2. Validity and Reliability Test

Variable	Alpha Cronbach's	Average Variance Extracted (AVE)
X1. Environmental Literacy	0,772	0,595
X2. Islamic Social Entrepreneur	0,908	0,783
X3. Community Support	0,844	0,764
X4. Policy Socialization	0,789	0,706
Y. Community Participation	0,897	0,766

The reliability test results show that all variables in this study have good reliability levels based on Cronbach's Alpha and Average Variance Extracted (AVE) values. The Environmental Literacy (X1) variable has a Cronbach's Alpha value of 0.772 and an AVE value of 0.595, indicating good reliability and sufficient convergent validity. The Islamic Social Entrepreneur (X2) variable has a very high Cronbach's Alpha value of 0.908 and an AVE value of 0.783, indicating that this instrument is very reliable and valid. The Community Support (X3) variable shows very good reliability with a Cronbach's Alpha value of 0.844 and an AVE value of 0.764, indicating strong convergent validity. The

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Policy Socialization (X4) variable has a Cronbach's Alpha value of 0.789 and an AVE value of 0.706, indicating good reliability and convergent validity. Subsequently, the Community Participation (Y) variable shows very high reliability with a Cronbach's Alpha value of 0.897 and an AVE value of 0.766, indicating strong convergent validity. Overall, these results show that the instruments used in this study are reliable and valid, and can be used to measure the constructs being studied with accuracy. This is consistent with the opinion of Musyaffi et al. (2021), that Composite Reliability (CR) and Cronbach's Alpha values should be greater than 0.7, while Convergent Validity, measured using Average Variance Extracted (AVE), should be greater than 0.5.

After conducting the structural model test in the PLS-SEM analysis, including the evaluation of outer loadings for indicator validity and construct reliability, the next step is to conduct hypothesis testing, as follows:

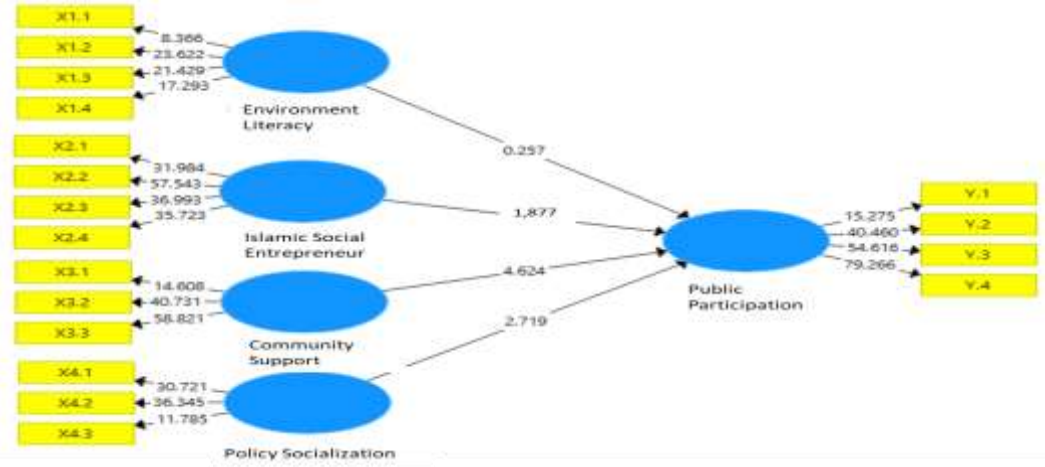


Figure 1. Goodness of Fit Test (GoF)

A saturated model is a model that has the same number of estimated parameters as the observed data. In this model, there is a perfect match between the estimated model and the observed data. On the other hand, an estimated model is a model that is estimated based on the observed data. This model has estimated parameters based on statistical analysis of the available data. The Estimated Model is used to test the fit of the estimated model to the observed data and obtain an estimate of the model fit (Abdillah & Hartono, 2015). The values of SRMR, d_ULS, and d_G are used as measures to estimate the fit between the estimated model and the population model. A lower SRMR value indicates a better fit between the estimated model and observed data, while lower values

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of d_ULS and d_G also indicate a better fit between the estimated model and observed data. In this case, both Saturated Model and Estimated Model have the same values for SRMR, d_ULS, and d_G, indicating that both models have a good level of fit with the observed data. In addition, there are also measures such as Chi-Square and NFI that calculate the difference between the estimated model and observed data. The lower the Chi-Square value, the better the fit between the estimated model and observed data. NFI, which ranges from 0 to 1, measures the fit between the estimated model and population model. The higher the NFI value, the better the fit between the estimated model and observed data. In this case, both Saturated Model and Estimated Model have the same values for Chi-Square and NFI, indicating that both models have a good level of fit with the observed data.

After verifying the model, the final step is to test the hypotheses that were formulated earlier. This hypothesis tests the relationship between variables in the conceptual model. PLS-SEM provides various statistical tests to evaluate the significance of each path or relationship in the model. This can be seen from the table below.

Table 3. Hypothesis Test Results

	Original Sample	T Statistics	P Values
Environmental Literacy → Community Participation	-0,018	0,257	0,798
Islamic Social Entrepreneur → Community Participation	0,267	1,877	0,016
Community Support → Community Participation	0,475	4,624	0,000
Policy Socialization → Community Participation	0,317	2,719	0,007

The results of the hypothesis test can be explained as follows:

Effect of Environmental Literacy on Community Participation

The results of the test for the effect between Environmental Literacy and Community Participation show that the path coefficient between the two variables is -0.018 with a T value of 0.257 and a p value of 0.798 (p>0.05). This indicates that there is not enough evidence to reject the proposed hypothesis.

In the context of waste management analysis, the lack of evidence for the impact of Environmental Literacy on Community Participation can be clarified with several strong

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arguments. As noted in the research by Idris et al. (2022), while environmental literacy is important for increasing individuals' understanding of environmental issues, including waste management, it does not necessarily directly drive participatory behavior within the community. This rejection of the hypothesis is consistent with the findings of Nugrahani et al. (2019), which explain that participation in waste management is influenced by broader social, economic, and cultural factors, such as social norms, public policies, and access to supportive infrastructure. From a statistical analysis perspective, Abdillah & Hartono (2015) suggest that the definitions and measurements of environmental literacy and community participation may not be sufficiently specific in the analysis context, which can obscure the true relationship between these variables. Additionally, Winarko et al. (2023) explain that differences in individual or community priorities in daily life can also affect the level of engagement in waste management activities, even if environmental literacy has improved their understanding. Therefore, to achieve a significant increase in community participation in waste management, it is essential to consider various contextual factors and broader influences beyond just individual environmental literacy.

Thus, the results of this analysis suggest that, within the analytical model used, there is no statistical evidence supporting a significant relationship between Environmental Literacy and Community Participation. This could be due to several factors, such as the sample size being insufficient to detect a small relationship, or other variables not included in the model that could affect the relationship between Environmental Literacy and Community Participation. From a community participation theory perspective, the lack of effect of Environmental Literacy on Community Participation in waste management can be explained through the concept that community participation is influenced not only by individual knowledge levels but also by broader social, cultural, and structural factors (Annashr et al., 2023). Environmental Literacy, which includes understanding environmental issues and sustainable practices, may not directly encourage individuals to actively engage in waste management activities without support from contextual factors, as reported by Nurapni et al. (2024). The conclusion of this research emphasizes that community participation is influenced by social norms governing behavior within the community, cultural values shaping attitudes toward the environment, and access to supporting infrastructure and policies. Therefore, to enhance community participation in waste management, it is necessary to consider not only improving environmental literacy but also creating a supportive environment, reinforcing social norms that appreciate sustainable practices, and ensuring fair access to

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infrastructure and policies that facilitate sustained and significant participation in environmental management efforts.

Effect of Islamic Social Entrepreneurship on Community Participation

The path coefficient between Islamic Social Entrepreneurship and Community Participation is 0.267, indicating a positive relationship between the two variables. The T value of 1.877 exceeds the critical threshold of 1.96, and the p value of 0.016 ($p<0.05$) indicates significant evidence that Islamic Social Entrepreneurship affects community participation in TPS-3R Tambakrejo Waru Sidoarjo. This finding suggests that Islamic Social Entrepreneurship has a significant positive impact on community participation in this context, supporting previous research such as Rehan et al. (2019), which shows that Islamic values in the form of Islamic practices positively influence the intention to participate in entrepreneurship. Similarly, the study by Laila et al. (2023) describes that Islamic knowledge and attitudes in entrepreneurship have a significant impact on the intention of SME owners in Malaysia and Indonesia to participate in waqf. The acceptance of this hypothesis also illustrates that Islamic Social Entrepreneurship (ISE) is a concept that combines Islamic principles with social entrepreneurship practices. The application of Islamic Social Entrepreneurship (ISE) in TPS-3R Tambakrejo Waru Sidoarjo has had a significant positive impact on community participation in waste management. Research conducted by Made et al. (2021); Astuti et al. (2020); Sari et al. (2021); and Arifiati & Hayat (2023) demonstrates that communities become more aware of the importance of sustainable waste management and are actively involved in waste processing activities, particularly recycling (TPS-3R), such as sorting waste, recycling, and composting. This indicates that ISE can mobilize communities to engage in solving problems collectively. Additionally, ISE also creates job opportunities and increases community income while strengthening a sense of brotherhood and mutual cooperation among them (Latifah & Soewarno, 2023). It can be said that ISE has proven to be an effective tool for increasing community participation in waste management and creating a more sustainable clean environment.

In the context of Islamic finance, as mentioned by Rehan et al. (2019), Islamic Social Entrepreneurship (ISE) plays a crucial role in promoting moral and religious values in waste management. As explained by Lacy & Rutqvist (2015), this approach not only emphasizes moral responsibility in environmental stewardship but also encourages active community participation through Islamic values that stress cleanliness and environmental preservation. According to Skalski et al. (2022), ISE not only motivates increased

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economic welfare but also strengthens social bonds and maintains ecological balance, aligning with the principles of Islamic finance that emphasize social justice and sustainability. Research by Nurfadillah. I et al. (2023) also highlights that ISE integrates Islamic ethical and moral values, such as justice, sustainability, and social concern, into social entrepreneurship practices.

Effect of Community Support on Community Participation

The analysis results show a positive and significant relationship between community support and community participation in TPS-3R Tambakrejo Waru Sidoarjo. This is evidenced by a path coefficient of 0.475, with a T value of 4.624, which far exceeds the critical threshold of 1.96, and a p value of 0.000 ($p<0.05$). It can be said that there is a positive and significant effect of community support on community participation in TPS-3R Tambakrejo Waru Sidoarjo. Strong community support can encourage higher community participation in waste management activities at TPS-3R. The acceptance of this hypothesis aligns with previous research such as Winarko et al. (2023), which concluded that community support is a factor influencing increased community participation in waste management. Similarly, research by Novega Santoso (2018) examines community attitudes and perceptions toward waste management, community behavior in waste management, socio-economic factors affecting participation, and barriers and challenges faced by the community in participating. This is consistent with studies by Arifiati & Hayat (2023); Novega Santoso (2018); Natsir et al. (2024); and Sari et al. (2021).

Additionally, examples from facilities and infrastructure, such as TPS-3R, not only provide a platform for effective waste management but also represent a concrete form of community empowerment. The empowerment in Tambakrejo Waru Sidoarjo is not only about providing access to facilities but also about developing community skills, knowledge, and confidence to actively engage in sustainable waste management practices. Strong community support in this regard not only enhances individual participation but also supports the creation of an inclusive and sustainable social environment, in line with Islamic finance values that emphasize fairness, community participation, and sustainability in communal decision-making.

Effect of Policy Socialization on Community Participation

The hypothesis test results show a significant positive relationship between Policy Socialization and Community Participation. The path coefficient between these two

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variables is 0.317 with a T value of 2.719, which exceeds the critical threshold of 1.96, and a p value of 0.007 ($p<0.05$), providing sufficient evidence to reject the null hypothesis. Thus, the hypothesis stating that there is an effect of policy socialization on community participation in TPS-3R Tambakrejo Waru Sidoarjo can be accepted. The acceptance of this hypothesis that there is an effect of policy socialization on community participation in TPS-3R Tambakrejo Waru Sidoarjo is also supported by relevant previous research, providing a stronger basis for this finding, such as the study by Hertati et al. (2023), which found that well-socialized policies to the public can enhance waste management effectiveness. Policy socialization not only provides information to the community but also builds their awareness and concern for the importance of waste management. This finding aligns with research that indicates policy socialization at TPS-3R Tambakrejo Waru Sidoarjo increases community participation by improving their understanding and engagement in waste management programs. Similarly, Muryanti (2020) highlights the importance of social entrepreneurship in motivating the community to engage in community-based initiatives. Effective socialization of environmental policies can motivate the community to actively participate, similar to how social entrepreneurship encourages innovation and collaboration for common goals.

Policy socialization in waste management has significant relevance to Islamic finance principles, especially in promoting social justice and sustainability. According to Tchobanoglous & Lee (2010), effective socialization plays a crucial role in raising community awareness of the importance of proper waste management and its environmental impacts. In the perspective of Islamic finance, which emphasizes transparency, social responsibility, and justice in communal decision-making, this socialization provides a solid foundation for building a collective understanding of environmental values and the importance of active participation in maintaining environmental cleanliness and health. Idris et al. (2022) also highlights that policy socialization builds support and cooperation among community members, aligning with Islamic finance principles that promote inclusiveness and fairness in decision-making.

CONCLUSION

Based on the analysis and discussion related to the research objectives, the following conclusions can be drawn. Environmental literacy does not have a significant impact on community participation. The study reveals that the public's understanding of environmental issues does not directly influence their involvement in waste management programs in the area. On the other hand, Islamic Social Entrepreneurship (ISE) has a

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significant positive impact on community participation. The findings show that social entrepreneurship based on Islamic values can effectively encourage community members to become more actively involved in waste management. ISE promotes community engagement by emphasizing moral and religious responsibilities for maintaining environmental cleanliness and sustainability. Moreover, community support has a very significant influence on community participation. The research suggests that a supportive community, which actively encourages its members, can substantially enhance their involvement in waste management programs. This support helps individuals develop the necessary skills, knowledge, and confidence to engage actively in waste management activities. Additionally, policy socialization has a significant positive effect on community participation. Effective communication of policies makes the public more aware of and receptive to waste management regulations, thereby increasing their motivation to participate. This highlights the importance of clear and understandable communication in bolstering waste management initiatives. Overall, the study demonstrates that Islamic Social Entrepreneurship, community support, and policy socialization play crucial roles in improving community participation in waste management at TPS-3R Tambakrejo. In contrast, environmental literacy does not appear to have a significant impact. These findings offer valuable insights for policymakers, practitioners, and researchers to develop effective Sharia-based strategies that foster increased community engagement in sustainable, socially just, and economically beneficial waste management programs.

Recommendations

Local governments are advised to enhance policy socialization by intensifying waste management policies to improve public understanding and involvement in TPS-3R programs, and to support the creation and strengthening of active community groups for increased collective participation. The community is encouraged to be more proactive in waste separation, engage in waste bank activities, and support local waste management initiatives, while continuously improving environmental literacy through education and participation in related activities to better understand the impact of waste. Future researchers are recommended to explore additional variables affecting community participation, such as cultural and technological aspects, and to conduct longitudinal studies to track changes in participation and the effectiveness of waste management programs over time.

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