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Islamic Social Entrepreneurship-Based Community Empowerment Model through Waste Management at TPS-3R Tambakrejo Sidoarjo: A Literature Review

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ABSTRACT

This study evaluates the effectiveness of multi-stakeholder collaboration and develops strategies for community empowerment to enhance skills, optimize the economic value of waste, and foster environmental awareness in line with Islamic values. Using a qualitative descriptive approach based on a literature review and empirical analysis at TPS-3R Tambakrejo, Sidoarjo, data were collected from relevant scientific references and documentation studies, validated through source triangulation and extended observations. Findings show that the Islamic Social Entrepreneurship (ISE) approach increases community participation in waste management, opens local economic opportunities through recycling and value-added products, and promotes environmental education. Participatory management at TPS-3R fosters synergy among local actors, government, and communities rooted in Islamic principles. Key findings highlight the significant potential of household waste management to generate economic value, the absence of a structured Islamic-based empowerment model, and the need for integrative strategies involving education, training, and regulatory support. Islamic values serve as a moral force, strengthening awareness and participation in environmental preservation. In conclusion, waste management based on ISE is both an environmental solution and an innovative empowerment model. Through active participation, cross-sector collaboration, and the application of sharia principles, communities can independently manage waste while improving their living standards sustainably. This research provides a foundation for developing community-based policies and business models that integrate economic, spiritual, and socio-ecological dimensions.

Keywords: Community Empowerment, Islamic Social Entrepreneurship (ISE), Waste Management, TPS-3R, and Community Welfare

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INTRODUCTION

Waste management is no longer just an effort to maintain environmental cleanliness, but has now developed into a new business opportunity that can increase economic potential and community welfare. In this context, waste management can be utilized as a productive sector that integrates community empowerment with sustainability values (El Adawiyah & Ramadhan, 2020). This approach opens up opportunities for the community to be actively involved in waste management, such as recycling, production of value-added goods, to the management of organic waste into compost or alternative energy. So this business-based waste management not only has an impact on improving the local economy but also becomes a means of building a better quality

of life for the community, including the Muslim community.

The Islamic Social Entrepreneurship (ISE) program is present as a relevant sharia economic model for managing waste productively. In this concept, waste management is carried out with sharia principles such as justice, sustainability, and benefits for many parties. ISE can be an alternative for Muslims to contribute to protecting the environment while creating halal economic value. Like the community-based Waste Bank program, it can be integrated with Islamic values through a philanthropic approach, productive zakat, or environmental waqf. So that ISE-based waste management not only provides solutions to environmental problems but also empowers communities to improve welfare and support sustainable economic development (Lasaiba, 2024); (Saputra & Noormansyah, 2024)(Saputra & Noormansyah, 2024)(Saputra & Noormansyah, 2024).

This research is important to be realized, because handling the waste problem in Indonesia, especially in various regions, has become a crucial issue, considering its significant impact on the environment, health, and economy. Waste not only pollutes the ecosystem but also creates major challenges in managing limited resources. On the other hand, community-based waste management offers great potential to improve community welfare, especially through innovations that support local economic sustainability. For Muslim communities, an approach based on Islamic values, such as *Islamic Social Entrepreneurship* (ISE), provides an opportunity to integrate waste management with sharia economic principles that focus on justice, benefits, and sustainability. This research is important to answer the challenges of waste management as part of community empowerment and identify sharia business models that are relevant to the local context.

The novelty of this research lies in the integration of the concept of *Islamic Social Entrepreneurship* (ISE) with community-based waste management, creating a sharia business model that is not only oriented towards increasing economic value but also community welfare. This research offers an innovative approach by making waste management a productive sector in accordance with Islamic principles, such as productive zakat management and environmental waqf. In addition, this research emphasizes the social impact in the form of increasing community environmental awareness as part of the responsibility of faith. Through a case study of TPS3R and the Bank Sampah program, this research explores the potential for sharia-based community empowerment that has not been widely explored, while providing sustainable solutions to environmental and social problems.

The purpose of this study is to examine the community empowerment model based on *Islamic Social Entrepreneurship* (ISE) in waste management, while evaluating the effectiveness of collaboration between stakeholders in supporting the program. This study seeks to identify opportunities and challenges in involving various parties, including the government, religious institutions, local communities, and the private sector, to create sustainable synergy. In addition, this study aims to develop an effective model or strategy to improve the quality of community empowerment programs, with a focus on skills development, optimizing the economic value of waste, and strengthening community environmental awareness. Thus, this study not only offers innovative solutions in waste management based on Islamic values, but also creates a strong foundation for multi-party collaboration that has a broad impact on community welfare and environmental sustainability.

Research problems include Low Public Awareness in Waste Management, that the community has not fully realized the importance of their role in waste management, such as sorting, processing, and recycling, which causes waste accumulation and bad environmental impacts. Still low Inter-Stakeholder Collaboration, namely the lack of optimal synergy between the government, local communities, the private sector, and religious institutions in supporting community empowerment-based waste management programs, so that the economic potential and social impacts that can be generated are not maximized. Lack of Islamic-Based Waste Management Models, namely although Islamic values emphasize the importance of cleanliness

and responsibility for the environment, the implementation of these values in the community empowerment model based on *Islamic Social Entrepreneurship* (ISE) has not been carried out in a structured and effective manner. Unoptimized Economic Potential from Waste. That waste, especially from households, traditional markets, and other sectors, has great economic potential. However, this potential has not been fully utilized due to the lack of innovation in community-based waste management. Lack of Access to Effective Empowerment Strategies, namely effective community empowerment strategies or models in managing waste and improving community welfare are not yet widely available, so that existing programs tend to be less integrated and unsustainable. The Existence of Social and Cultural Challenges in Program Implementation. That the habits and mindset of the community regarding waste management are often obstacles, especially in areas that do not yet have a strong culture in maintaining cleanliness and recycling waste.

LITERATURE REVIEW

Community empowerment

According to Payne in Maspaitella and Nancy Rahakbauwi, empowerment is basically a process that aims to help people gain the ability to make decisions and determine actions to be taken regarding their own lives. This process is carried out by increasing the capacity and self-confidence of individuals and groups to use their potential. One way to do this is through the transfer of power or strength from their environment (Maspaitella & Rahakbauwi, 2014). According to Kartasasmita, community empowerment is viewed as an effort to improve the dignity and status of the community, especially those who are in a state of inability, so that they can free themselves from poverty and backwardness. Perspective This emphasizes the importance of increasing community capacity in order to achieve independence (Juwita Pratiwi Lukman, 2024).

Based on the definitions explained above, community empowerment can be interpreted as a process that aims to improve the ability of the community to utilize the resources they have. These resources include human resources and natural resources available in their environment. The main goal of this empowerment is to increase community productivity so that their lives can develop in a better direction, by achieving sustainable welfare (Prawisudawati et al., 2024); (Kehik, 2018)(Kehik, 2018)(Kehik, 2018).Community economic empowerment does not only focus on improving the ability of individuals or groups to improve their standard of living. More than that, this process is also directed at building community independence so that they are able to develop independently. Thus, community economic empowerment includes efforts to create strong motivation within the community to actively participate in the sustainable development process, both from social, economic, and environmental aspects.

Islamic Social Entrepreneur (ISE).

Entrepreneurship according to Fauziah (2021) is the process of creating value through the identification, development, and exploitation of opportunities, either through the creation of new businesses or the expansion of existing businesses. This process involves risk-taking, creativity, innovation, and the ability to manage resources effectively. An *entrepreneur,* as defined by Fauziah, is an individual involved in the *entrepreneurship process* is an innovator who creates new opportunities or takes advantage of existing opportunities to generate value and profit. *Entrepreneurs* are also identified as leaders who have vision, passion, perseverance, and the ability to face challenges in creating and developing a business. Thus, *entrepreneurship* can be interpreted as the process of creating value through the identification and exploitation of opportunities, while an *entrepreneur* is an individual who carries out the process with the courage to take risks, creativity, and innovation to achieve business goals (Fauziah, 2021).

3R Waste Management

Waste management is a systematic and continuous activity that includes reducing and handling waste. to minimize environmental impacts and improve public health (Venkata Rajeev et al., 2024). 3R waste management is a method that emphasizes the application of processes with *a 3R approach* (*reduce, reuse,* and *recycle*). Waste has become a major problem in Indonesia, along with increasing population, urbanization, changes in consumption patterns, people's lifestyles, economic growth, and technological advances. These factors contribute to the increasing number of piles of waste, the diversity of types, and increasingly complex characteristics of waste (Fitriani, Wedi, Mulyono, 2019). Waste processing carried out at the household level using the 3R waste processing method can have a positive impact on public health and welfare.

Community empowerment-based waste management through the *Islamic Social Entrepreneurship* (ISE) approach is a management model that places the community as the main actor in the entire process, from collection, sorting, processing, to utilization of waste management results. This approach integrates the principles of environmental sustainability with Islamic values, such as responsibility (*amanah*), welfare (*maslahah*), justice (*adl*), and balance (*mizan*). The main goal is to create solutions that not only focus on environmental improvement, but also on social empowerment and improving the economic welfare of the community (Setiawan et al., 2024).

Research by Achmad Room Fitrianto, *et al.* (2024) that community-based waste bank management can significantly increase community participation in waste management, as well as increase environmental awareness among the community. This study found that active community involvement in waste management activities, such as collection, sorting, and recycling, not only reduces the volume of waste generated, but also creates economic opportunities through waste utilization. In addition, this study identified that a business model developed by involving input from various stakeholders, including the community, academics, and government, can increase the effectiveness of waste management programs. This study also highlights the importance of education and training for communities to build capacity and skills in waste management, as well as create awareness of the environmental and economic benefits of good waste management practices (Fitrianto et al., 2024).

Indry Stefany and Isna Rahmawati (2023) The results of the empowerment carried out can help the community in meeting daily needs and increasing community capacity in waste management. The results of empowerment can refer to people's abilities so that they have the ability to meet basic needs, increase income and participate in the empowerment process (Stefany & Rahmawati, 2023). Research Novelty: This research specifically discusses community empowerment through waste management, with a focus on increasing community income. This research refers to the ability of individuals to meet their basic needs, increase income, and actively participate in the empowerment process.

METHODS

Research methods are scientific ways to obtain data for a specific purpose. The research conducted is oriented towards collecting field and empirical data, namely having certain criteria such as having valid, usable and objective data (Sugiyono, 2014); (Endah Marendah Ratnaningtyas et al., 2023). This study uses a qualitative method with a descriptive approach that has a scope of social reality construction and cultural meaning, focuses on interactive processes, events, authenticity, is not value-free, integrated theory and data, situational or contextual and researcher involvement. (Moleong, 2009)This study uses a qualitative method is research methods used to research natural object conditions, where the researcher is the key instrument, data analysis is inductive (Creswell, 2016). Research qualitative aiming to obtain understanding Which authentic about experience people, as felt people concerned. Observation Participatory

and in-depth interviews (with open-ended questions) are considered potential methods for this purpose (Moleong, 2009). The research outline *plan* is shown in Figure 1 below.

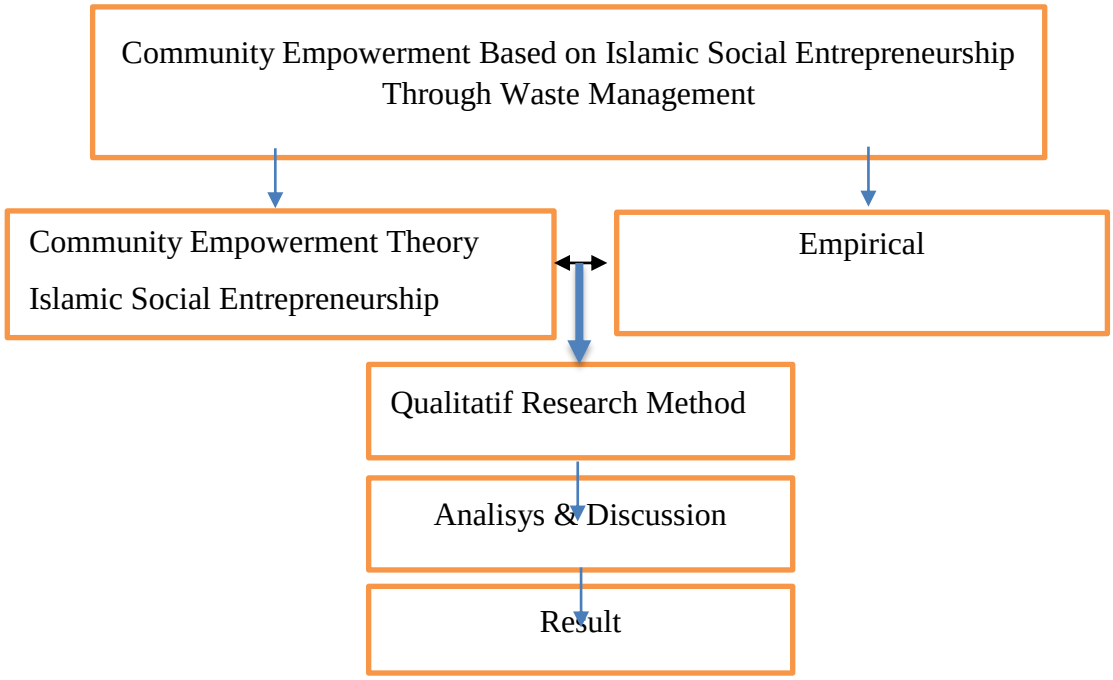


Figure 1. Research Design

This type of research uses a descriptive qualitative approach. The descriptive approach is a method that aims to describe or explain phenomena in detail based on data obtained without any manipulation of variables. This research focuses on "what is" or objectively portrays certain situations and conditions (Fadli, 2021). Descriptive research aims to describe a particular phenomenon or condition accurately and systematically. This can include population characteristics, behavioral patterns, relationships between variables, or trends in a community (Moleong, 2009).

Approach This allows researchers to explore subjective experiences and meanings related to the community empowerment model based on *Islamic Social Entrepreneurship* through waste management. Qualitative research emphasizes the quality and suitability of data to objectives. study, No quantity data Which obtained. Researcher own role Which important For can know condition Which Actually. Ability And capacity researcher determine research results to obtain data and process it, so that researcher use type approach descriptive For can to know the real picture of the experience and subjective meaning of the community empowerment model based on *Islamic Social Entrepreneurship in the field of* waste management (Wita & Mursal, 2022).

The research location was conducted at TPS-3R Tambakrejo Village, Waru District, Sidoarjo. TPS-3R Tambakrejo was chosen as the research location because it has a community empowerment strategy based on *Islamic Social Entrepreneurship* in the field of waste management. The location selection was carried out carefully with considering diversity, coaching approaches, and waste manager profiles. This aims to cover a variety of experiences and conditions, so that results further research representative and can generalized.

Validity is a method used to check the accuracy of results. research. Data validity is the validity of data. Validity is the degree the relationship between the data that occurs in the research object and the power that can be reported by researchers (Fadli, 2021). Data validity techniques are techniques for testing the validity of data. data. Validity data is draft important Which updated from draft validity and reliability (Bungin, 2015). The types of validity

techniques data, between other:

A qualitative researcher needs to involve himself in the field directly. direct. Matter the is Wrong One key success For obtain authentic data. In this way, researchers can observe in detail more not enough "open" from roles subject Which examined. Extension observation can increase credibility or trustdata. With extension observation means researcher return to field,do observation, interview Again with source data Which found and also newer data sources. Extension of observations means the relationship between Researchers and sources will become more connected, more familiar, more open, each other arise trust, so that information Which obtained the more Lots And complete. Extension observation For test credibility data study focused on testing to data Which has obtained. Data Which obtained after rechecked in the field Correct or No, There is change or Still still. After checked return to field data Which has obtained Already can accountable means true and credible, then the extension observation needs to be ended. Triangulation is a method of matching data obtained from various sources. source. Technique This used For cross check or compare a data. By Because That, results information or data Which can trusted Which will used For interesting conclusion. Triangulation can done with a number of method in among others, triangulation honesty researcher, triangulation with source data, triangulation with method, And triangulation with theory (Majid, 2017).

RESULTS AND DISCUSSION

In this literature review, the results of the analysis of documents related to this research will be explained as follows. Figure 2 shows the trend of the number of scientific documents from 1992 to 2025 related to a particular topic, most likely about community empowerment, waste management, or *Islamic Social Entrepreneurship*. Based on the graph, it can be seen that for almost the first three decades (1992–2018), the number of published documents was very low, almost approaching zero each year. This shows that during this period, the topic in question had not received much attention in the academic world or had not become a priority on the global research agenda. However, there was a significant change starting in 2019, when the number of documents suddenly increased to around 26 publications, marking the beginning of increasing interest in the issue. Although there was a drastic decrease in 2020 and 2021, a sharp increase occurred again in 2023 and reached its peak in 2024 with around 60 published documents.

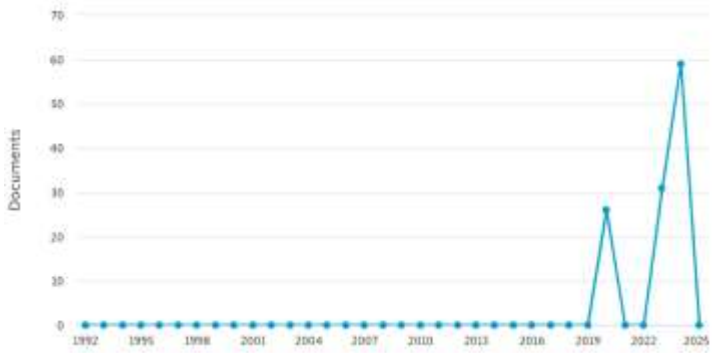


Figure 2. Documents by Year

This shows that in recent years, there has been a huge surge in scientific attention to the theme. This significant increase could be due to increasing global awareness of the importance of sustainable environmental management, the circular economy, or the role of social and religious values in community development. Interestingly, the graph also shows that in 2025, the number of publications drops back to zero, which can be interpreted as the unavailability of data or documents because the year is still running. Thus, this graph as a whole reflects that research in

this field has experienced very rapid growth in the last five years, which confirms the relevance, urgency, and strong academic momentum of the topic raised in this study. This provides a great opportunity for new, more contextual scientific contributions, especially in regions or communities that have not been widely highlighted in the global literature.

Table 1. Documents by Year

Year	Documents
2025	0
2024	59
2023	31
2022	0
2021	0
2020	26
2019	0
2018	0
2017	0

Table 1 shows data on the number of scientific documents published by year, reflecting the dynamics and trends of research developments in certain topics, most likely related to community empowerment, waste management, or Islamic Social Entrepreneurship. Based on the data in the figure, there has been a significant spike in the number of publications in the last three years. The year 2024 recorded the largest number of documents, namely 59 documents, followed by 2023 with 31 documents, and 2020 with 26 documents. Meanwhile, in previous years, such as 2017 to 2019, as well as 2021 and 2022, no publications were recorded (zero), and for 2025 there is no data because it is still ongoing. This trend shows that the topics discussed have experienced a sharp increase in scientific attention in recent years. The absence of documents in previous years indicates that this issue has not previously been a major focus of scientific studies, or perhaps has not been widely developed in the international literature. However, from 2020 to 2024, there is an exponential growth in publications, reflecting that the related issues are starting to be considered important and relevant in the context of sustainable development, community economic empowerment, and modern environmental challenges. Thus, this graph strengthens the argument that the research conducted is in a very actual context, and has high relevance in the global academic ecosystem. The increasing trend in the number of documents in the 2020–2024 period also indicates a great opportunity for new scientific contributions, including in developing more contextual approaches such as the integration of Islamic values in community-based empowerment and waste management models.

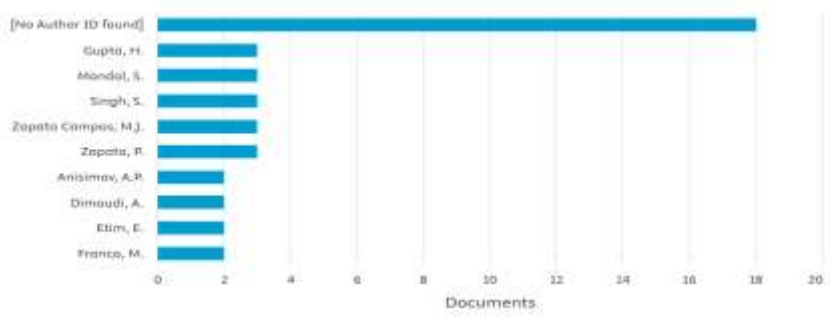


Figure 3. Document by Author

Figure 3 illustrates the distribution of the number of scientific documents based on the name of the author or contributor in topics related to community empowerment, waste management, and *Islamic Social Entrepreneurship*. This graph presents a list of the ten authors with the most publication contributions in the field. The data shows that the *[No Author ID found] category* dominates with 18 documents, far exceeding other authors. This indicates that most of the documents recorded in the database have not been specifically identified by the author indexing system, which likely come from journals or proceedings that have not been fully integrated with indexing metadata such as Scopus or Web of Science. Outside of these categories, authors such as Gupta, H., Mondal, S., Singh, S., and Zapata Campos, MJ, each contributed two documents, indicating active contributions from several academics who are indeed concerned with the issue of sustainability and environmental management.

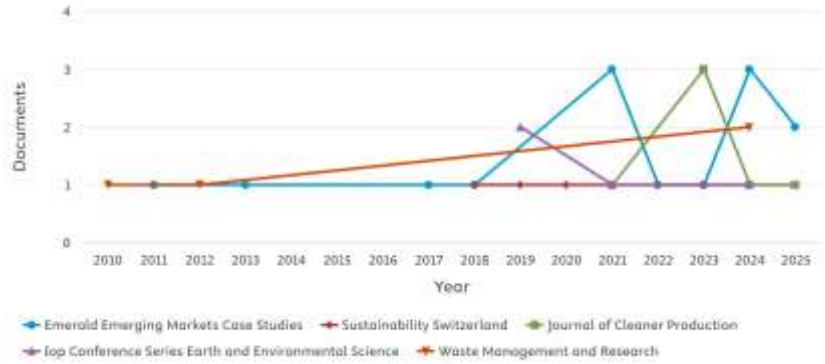
The presence of several names of researchers from various countries shows that this issue has received global attention and has become a space for cross-disciplinary discussion. Although the number of contributions from each author is relatively small, this even distribution reflects that this research topic is not only the focus of a limited group, but also attracts the interest of many academics from various backgrounds and institutions. Thus, Figure 3 shows that scientific studies on this topic are still relatively spread out individually, and not yet concentrated on certain figures or institutions. This opens up great opportunities for new researchers, including the authors of this study, to make significant contributions and form new scientific networks in the field of community empowerment based on Islamic values in waste management. In addition, this data also indicates the need to improve the management of publication metadata so that author identities can be recorded accurately in the indexing system.

Table 2. Documents by Author

Author	Documents
[No Author ID found]	18
Gupta, H.	3
Mondal, S.	3
Singh, S.	3
Zapata Campos, M.J.	3
Zapata, P.	3
Anisimov, A.P.	2
Dimoudi, A.	2
Etim, E.	2

Table 2 shows a tabular view of a database or scientific document management system, which sorts authors based on the number of documents they have contributed. This table has two main columns, namely "Author" and "Documents". The "Author" column lists the names of the authors involved in the publication of the document, while the "Documents" column shows the number of documents associated with each author. The author with the most documents contributed is at the top, namely the entry "[No Author ID found]" with 18 documents. This shows that the documents cannot be linked to a specific author ID in the system. Below them, there are several other authors who each contributed 3 documents, such as Gupta, H.; Mondal, S.; Singh, S.; Zapata Campos, MJ; and Zapata, P. Other authors, such as Anisimov, AP; Dimoudi, A.; and Etim, E., each have 2 documents. The table appears to be arranged in descending order of the number of documents, as indicated by the downward-

pointing arrows in the "Documents" column. The authors' names are displayed as links, which can likely be clicked to reveal more details about their contributions. The small red and white symbols next to each author's name appear to serve as status icons or indicators, perhaps related to a particular database or system. This display is useful for analyzing author contributions in a collection of scholarly documents or research databases.



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Figure 4. Documents per year by Source

Figure 4 shows the number of scientific documents published from various sources of international journals and proceedings each year, related to the themes of community empowerment, waste management, and *Islamic Social Entrepreneurship.* This graph presents data from five main sources, namely *Emerald Emerging Markets Case Studies, Sustainability Switzerland, Journal of Cleaner Production, IOP Conference Series Earth and Environmental Science,* and *Waste Management and Research.* The trend shown shows that most sources began actively publishing related documents in the period 2018 to 2024, with fluctuations in the number of documents each year. Specifically, *Waste Management and Research* (orange) shows the most consistent and stable growth pattern from 2010 to 2024, with a slight increase from one to two documents per year, indicating continued interest in waste management issues. Meanwhile, *Emerald Emerging Markets Case Studies* (light blue) shows a significant spike in 2021 and 2024 with three documents, indicating increasing interest in case studies in emerging markets, especially in the context of local-based empowerment.

The Journal of Cleaner Production (green) had the highest contribution in 2023 with three papers, indicating an increasing attention to sustainability and cleaner production issues, which are highly relevant to the Islamic Social Entrepreneurship approach. The *IOP Conference Series* (purple) showed initial engagement since 2019, with a decrease in the number of papers in subsequent years, while *Sustainability Switzerland* (maroon) appeared sporadically and was limited to certain years, indicating a more selective engagement with this theme.

These patterns reflect that issues related to value-based waste management and community empowerment have increased in academic popularity, especially in the last three years. This also shows that the research topics raised in this study are in line with global scientific trends and have high relevance to various disciplines, including environmental, social, and sharia economics. Thus, Figure 4 confirms that the theoretical and empirical foundations of this research come from reputable and up-to-date sources, while reflecting the importance of multidisciplinary collaboration in addressing socio-environmental challenges in a sustainable manner.

Table 3. Documents per year by Source

Source	Documents
Emerald Emerging Markets Case Studies	14
Sustainability Switzerland	8
Journal of Cleaner Production	6
Iop Conference Series Earth and Environmental Science	4
Waste Management and Research	4
Journal of Environmental Management	3
Lecture Notes in Networks and Systems	3

Table 3 displays a table containing a list of publication sources or scientific journals along with the number of documents published in each source. This table has two main columns, namely "Source" and "Documents". The "Source" column lists the names of journals or scientific conference proceedings, while the "Documents" column shows the number of documents or articles originating from that source. The table is sorted by the "Documents" column in ascending order, indicated by an upward-pointing arrow icon at the top of the column. The source with the largest number of documents is *Emerald Emerging Markets Case Studies* with 14 documents, indicating that this journal is the source that contributed the most publications to the data displayed. It is followed by *Sustainability Switzerland* with 8 documents, and *Journal of Cleaner Production* with 6 documents. There are two sources that each contributed 4 documents, namely *IOP Conference Series: Earth and Environmental Science* and *Waste Management and Research*. Then, there are two more sources that each contributed 3 documents, namely *Journal of Environmental Management* and *Lecture Notes in Networks and Systems*. Each entry in the "Source" column appears to be displayed as a clickable link to see more details, possibly including a list of articles that originated from that journal. The small red and white icons next to some sources indicate the status or type of the journal in the system, while others are marked with a gray icon, which may indicate differences in category or metadata. This table provides a clear picture of the distribution of publications by source, which is very useful for bibliometric analysis or mapping of dominant literature sources in a research field.

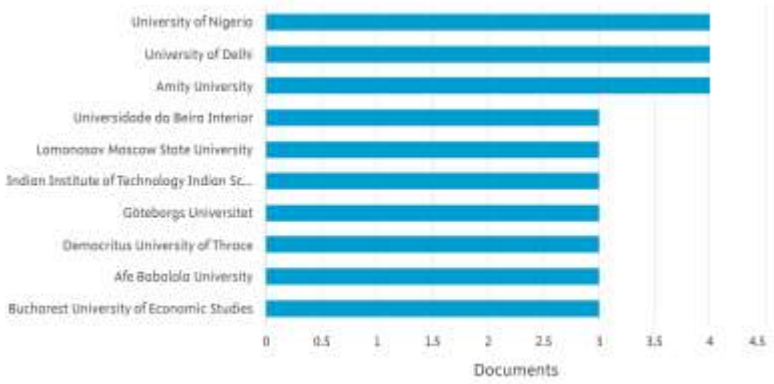


Figure 5. Document by Affiliation

Figure 5 is a horizontal bar graph that presents publication contribution data from various universities or academic institutions based on the number of scientific documents they produce. This graph shows the ten institutions with the highest number of documents, with the horizontal axis indicating the number of documents and the vertical axis indicating the name of

the institution. The top three institutions — University of Nigeria, University of Delhi, and Amity University —each produced 4 documents, making them the largest contributors in this dataset. Meanwhile, the other seven institutions— Universidade da Beira Interior, Lomonosov Moscow State University, Indian Institute of Technology Indian School of Mines, Göteborgs Universitet, Democritus University of Thrace, Afe Babalola University, and Bucharest University of Economic Studies —each contributed 3 documents. The length of the bars in the graph reflects the number of documents produced, with all values falling in the range of 3 to 4 documents. This graph shows that publication contributions are fairly even among the listed universities, although there is a slight edge for the top three institutions. Overall, this graph provides a clear visual overview of the level of scientific publication activity of different institutions in a particular topic or field of study.

Table 4. Documents by Affiliation

Affiliation	Documents
University of Nigeria	4
University of Delhi	4
Amity University	4
Universidade da Beira Interior	3
Lomonosov Moscow State University	3
Indian Institute of Technology Indian School of Mines, Dhanbad	3
Göteborgs Universitet	3
Democritus University of Thrace	3

Table 4 shows a table showing the number of scientific documents based on the institutional or university affiliation of the authors. This table has two main columns: the first column titled "Affiliation" which lists the names of academic institutions, and the second column titled "Documents" which shows the number of documents or publications associated with each institution. This table is arranged in descending order of the number of documents, as indicated by the downward arrow in the "Documents" column. From the data displayed, there are three top universities that each contributed 4 documents, namely the University of Nigeria, University of Delhi, and Amity University. All three are the institutions with the most contributions to the collection of publications. Furthermore, there are six other universities that each produced 3 documents, namely: Universidade da Beira Interior, Lomonosov Moscow State University, Indian Institute of Technology Indian School of Mines, Dhanbad, Göteborgs Universitet and Democritus University of Thrace. This table also includes colored icons to the left of the university names, which most likely indicate the status or category of affiliation in the system (e.g., active institution, indexed, or others). Overall, this figure provides important information about the distribution of scientific contributions from higher education institutions around the world, and shows that not only large universities from developed countries, but also institutions from developing countries such as Nigeria and India are actively contributing to scientific publications on a particular topic. This table is very useful in bibliometric analysis, mapping academic collaborations, or assessing institutional productivity in research.

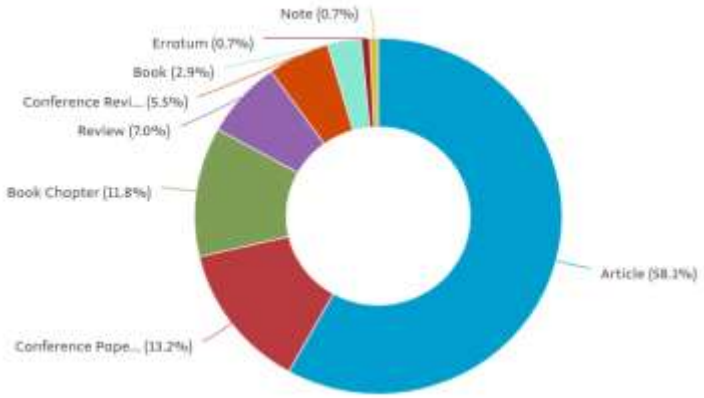


Figure 6. Document by Type

Figure 6 shows a donut chart that illustrates the distribution of scientific document types based on their percentage. The main purpose of this visualization is to show how much each type of publication contributes to the total number of documents analyzed. The most dominant document type is scientific articles (Article) which covers 58.1 % of the total. This shows that more than half of the scientific publications observed in this dataset are articles in journals, which are the most common form of academic publication. The next category is conference papers (Conference Paper) with 13.2 %, which shows the importance of scientific forums such as seminars and conferences as a forum for disseminating research results. Followed by book chapters (Book Chapter) as much as 11.8 %, which shows academic contributions in the form of parts of compilation books. Other categories that are also significant are reviews or reviews (Review) with 7.0 %, and conference reviews (Conference Review) at 5.5%, which are generally evaluations of literature or reports of scientific activities. Other document types include Books at 2.9%, and Erratums and Notes at 0.7% each, which are minor but still important categories as they indicate corrections or additional notes to previous publications. Overall, this figure provides a comprehensive picture of publication format preferences in the academic community, where journal articles remain the primary form of research delivery, while conferences and book contributions also play a significant role in disseminating knowledge.

Table 5. Document by Type

Document type	Documents
Article	158
Conference Paper	36
Book Chapter	32
Review	19
Conference Review	15
Book	8
Erratum	2
Note	2

Table 5 shows the classification of the number of scientific documents based on the type of publication (document type). The data is arranged in descending order based on the number of documents, which provides an overview of the form of presentation of research results or

scientific works most commonly used by researchers. The most dominant document type is Article, with a total of 158 documents, which is the main form of publication in scientific journals. Articles typically contain original research results and are the primary means of disseminating scientific knowledge to the academic community. Next is the Conference Paper (Conference Paper) consisting of 36 documents. This shows the importance of scientific forums such as conferences as a venue for presenting the results of initial research or ongoing studies, which can then be developed into journal articles. Book Chapters are in third place with 32 documents, indicating the contribution of researchers in compilation books that are generally thematic and more in-depth in discussing certain topics. This shows that publications in the form of book chapters also have an important role in the dissemination of knowledge, especially in interdisciplinary studies. Reviews are recorded as many as 19 documents, indicating an interest and need to analyze and synthesize findings from various previous studies. This type of article is useful in providing a comprehensive perspective on a particular topic. Conference Reviews consist of 15 documents, usually containing a summary or review of conference activities, including research trends discussed, and often serve as references for understanding the direction of development in a field. Furthermore, there are 8 documents of the Book type, which show contributions in the form of complete monographs, although the number is smaller than other types of publications because they are more comprehensive and take longer to compile. Finally, the Erratum and Note document types each have only 2 documents, indicating that both are rarely used publication forms. An Erratum is usually published to correct an error in a previous publication, while a Note is a short note or comment regarding a research.

Overall, these data suggest that journal articles remain the primary and most widely used form of scholarly communication, followed by conference contributions and books, while other document forms have a more specialized or limited role.

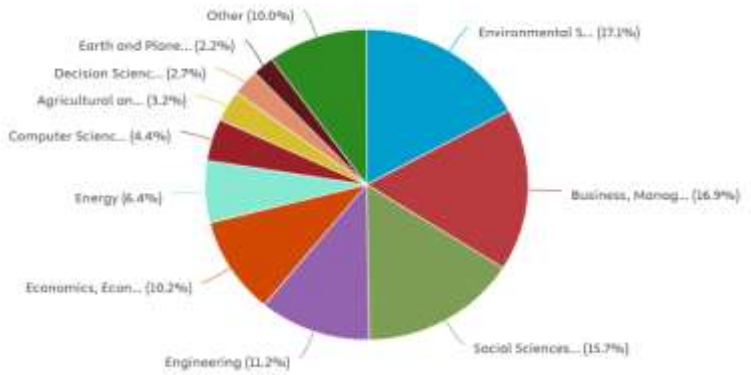


Figure 7. Documents by Subject Area

Figure 7 is a pie chart showing the distribution of academic disciplines or fields based on the proportion of contributions of scientific documents or publications. This diagram presents data in percentage form for each field, showing how much each field contributes to the overall documents analyzed. From this graph, the Environmental Science field ranks highest with a contribution of 17.1%, indicating a high level of interest and attention to environmental issues in the academic world. Followed by the Business, Management and Accounting field at 16.9%, and Social Sciences at 15.7%, indicating that social and economic aspects are also the main focus of research. Furthermore, Engineering covers 11.2%, and Economics, Econometrics and Finance at 10.2%, reflecting the importance of technological development and economic analysis in scientific contributions. The Other category accounts for 10.0 %, which includes disciplines that are not specifically mentioned. Energy contributes 6.4%, followed by Computer Science with 4.4%, Agricultural and Biological Sciences with 3.2%, Decision Sciences with 2.7%, and Earth and Planetary Sciences with 2.2 %. Overall, this graph illustrates the breadth and diversity of disciplines contributing to scientific publications, with strong dominance from environmental,

management, social, engineering, and economic sciences. This suggests that issues of sustainability, organization, and socio-economic development are of great interest in current research.

Table 6. Documents by Subject Area

Subject area	Documents
Environmental Science	101
Business, Management and Accounting	100
Social Sciences	93
Engineering	66
Economics, Econometrics and Finance	60
Energy	38
Computer Science	26
Agricultural and Biological Sciences	19

Table 6 shows a list that presents the number of scientific documents or publications based on scientific field (subject area). The data is arranged in descending order by number of documents, illustrating the level of productivity or research focus in various disciplines. The Environmental Science field occupies the top position with 101 documents, indicating that environmental topics are a major concern in research. This is likely related to the growing awareness of issues such as climate change, pollution and sustainability. Second place is taken by Business, Management and Accounting with 100 documents, indicating that managerial and accounting aspects remain an important focus, perhaps related to efforts to manage resources, organizational efficiency and financial policies. Then Social Sciences is in third place with 93 documents, indicating that social issues and human behavior are a significant part of interdisciplinary studies. Engineering has 66 documents, illustrating the important role of technology in solving practical problems and supporting sustainable development. Economics, Econometrics and Finance follows with 60 documents, demonstrating the importance of economic studies in supporting policy-making and socio-economic impact analysis. Energy follows with 38 documents, highlighting the focus on energy efficiency, renewable energy and energy transition. Meanwhile, Computer Science has 26 documents, reflecting the role of information technology and artificial intelligence in modern research. Finally, Agricultural and Biological Sciences recorded 19 documents, indicating the relevance of life sciences in food security and the environment. Overall, this data reflects a multidisciplinary focus in scientific publications, with a strong emphasis on environmental, economic, social and technological issues as key pillars in the development of today's science.

CONCLUSION

The results of this study can be concluded that waste management is not only an environmental problem, but can be used as an opportunity to create economic and social value for society. Through the Islamic Social Entrepreneurship (ISE) approach, waste management can be carried out productively and sustainably while still prioritizing Islamic values, such as justice, usefulness, and social responsibility. This study emphasizes that ISE is able to integrate the principles of Islamic economics with community empowerment efforts in the environmental sector, so that a business model is created that is not only economically halal, but also has an impact on social welfare and environmental preservation. The empowerment model studied in this study prioritizes active community participation, multi-stakeholder collaboration

(government, religious institutions, communities, and the private sector), and strengthening community capacity through education, training, and utilization of local potential, such as waste banks and TPS-3R.

The results of the study show that the ISE concept is effective in building environmental awareness, increasing community income through recycling and waste processing, and creating a more independent and sustainable system. However, the study also identified a number of challenges, such as low public awareness, less than optimal collaboration between parties, and the lack of a structured ISE model in the context of waste management. Therefore, a more comprehensive and integrated strategy is needed to realize sustainable community empowerment, including an educational approach based on Islamic values and strengthening local institutional systems. Thus, this article makes an important contribution to the literature on community empowerment, by highlighting the great potential of Islamic value-based waste management as an innovative solution to social and environmental challenges, as well as a real effort in realizing sustainable development at the community level.

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