

Exploring the Synergy between Appropriate Technology and Entrepreneurship in Islamic Community Development: A Bibliometric Analysis

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ABSTRACT

The rapid advancement of technology has profoundly influenced socio-economic dynamics, particularly within Islamic societies. This study explores the relationship between appropriate technology, entrepreneurship, and Islamic community development through a bibliometric analysis. Utilizing Publish or Perish and VOSviewer, 600 articles published between 2019 and 2024 were analyzed to identify trends, key themes, and research opportunities.

The findings reveal that entrepreneurship plays a crucial role in Islamic community development, driven by principles of self-reliance and collective welfare rooted in Islamic teachings. Appropriate technology emerges as an enabler of sustainable solutions tailored to local needs, promoting inclusivity and effectiveness. Furthermore, the analysis highlights the transformative impact of the COVID-19 pandemic, which accelerated the adoption of digital solutions and emphasized the importance of resilience in Islamic finance.

Overlay and density visualizations provide additional insights, identifying emerging themes such as the integration of Islamic finance with technology and the application of innovative solutions in rural contexts. These findings underline the importance of aligning technological advancements and entrepreneurial practices with Islamic values to foster sustainable and inclusive development. This study offers actionable insights for researchers, policymakers, and practitioners seeking to address socio-economic challenges within Islamic communities.

Keywords: Islamic Community, Entrepreneurship, Appropriate Technology, Sustainable Development, bibliometric analysis.

INTRODUCTION

The rapid advancement of technology in recent decades has significantly influenced the socio-economic dynamics of communities worldwide, including Islamic societies (Afzal et al., 2022). In this context, appropriate technology has emerged as a critical tool for promoting sustainable development. Defined as technology designed to meet the specific needs, resources, and values of local communities, appropriate technology ensures effective implementation and alignment with the unique characteristics of the society it serves (Shin et al., 2019).

Simultaneously, entrepreneurship is increasingly recognized as a key driver of economic growth and social welfare. In Islamic communities, entrepreneurial values are deeply rooted in religious teachings that encourage self-reliance, job creation, and contributions to collective well-being (Rehan et al., 2019). The synergy between appropriate technology and entrepreneurship presents a significant opportunity to foster development in Islamic societies in a more targeted and impactful manner (Abdullah & Azam, 2020).

However, the existing literature on the relationship between appropriate technology, entrepreneurship, and Islamic community development remains fragmented and limited. There is a need for a deeper understanding of how these two concepts can mutually reinforce each other and contribute to sustainable community development. Furthermore, the recent COVID-19 pandemic has underscored the importance of digital transformation in addressing global challenges (Cheshmehzangi, 2021). The pandemic has also opened new opportunities for entrepreneurship rooted in Islamic values, supported by technological advancements.

This study aims to address these gaps by conducting a comprehensive bibliometric analysis of the existing literature. The analysis explores key themes, trends, and conceptual relationships related to appropriate technology, entrepreneurship, and Islamic community development. By providing in-depth insights, this study aspires to inform policies and practices for more sustainable development aligned with Islamic values.

METHODOLOGY

Research Design

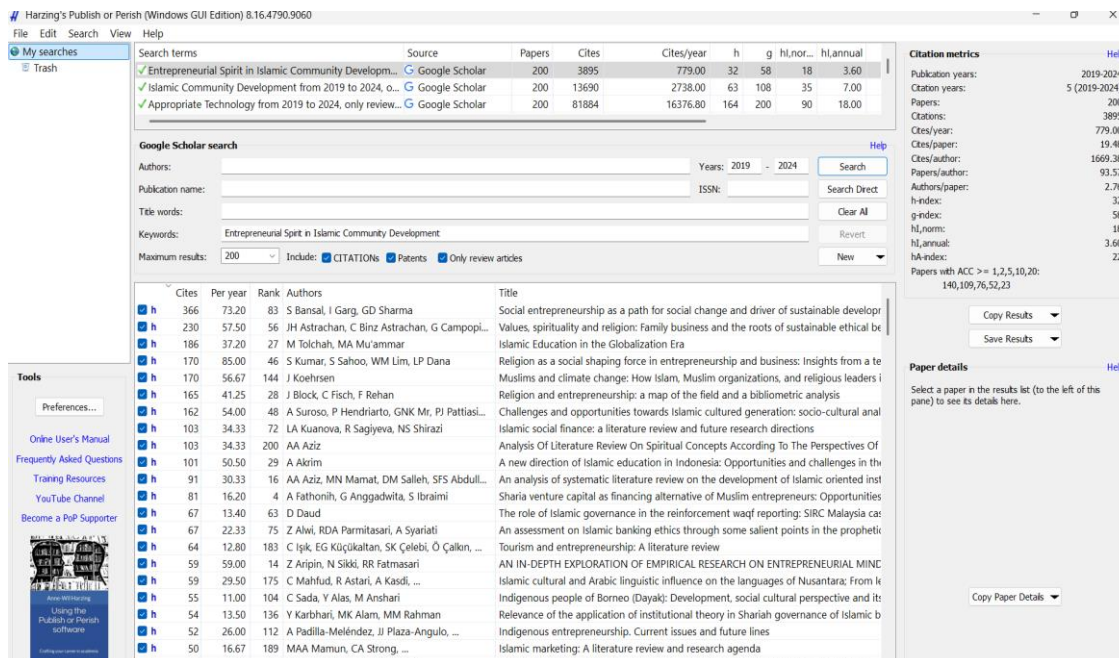
This study employs a bibliometric analysis approach to explore trends, themes, and research opportunities in the intersection of appropriate technology, entrepreneurship, and Islamic community development (Alshater et al., 2021). Publish or Perish software was used to collect bibliometric data, while VOSviewer was utilized for visualizing thematic connections and relationships.

Data Collection

Data Sources

Data were collected from Google Scholar using the **Publish or Perish** software.

Picture 1: Display of Publish or Perish (PoP)



The data parameters are the data search process using the Publish or Perish application by searching for the following keywords:

1. Entrepreneurial Spirit in Islamic Community Development
2. Islamic Community Development
3. Appropriate Technology.

The time frame to search for these articles is those published between 2019 and 2024. The maximum results of data is 200 articles per keyword (600 articles in total). Data formats: **RIS** for analysis in VOSviewer and **CSV** for descriptive statistical analysis.

Visualization Process:

Data from Publish or Perish were imported into VOSviewer to generate:

1. **Network Visualization:** To analyze thematic connections, such as *technology*, *entrepreneurship*, dan *Islamic community*.
2. **Overlay Visualization:** To observe trends over time based on publication.
3. **Density Visualization:** To evaluate the intensity of research on specific topics and identify future development opportunities.

Visualization Parameters

1. **Minimum Keyword Occurrence:** Ten times.
2. **Clusters and Relationships:** Keywords with significant connections were grouped into clusters generated by VOSviewer.

RESULTS AND DISCUSSION

Publication Statistics

The bibliometric analysis reveals the overall volume and impact of research on the themes of appropriate technology, entrepreneurship, and Islamic community development. A total of **600 articles** were identified from 2019 to 2024, distributed evenly across three key themes.

Volume and Citations:

1. Articles on *Entrepreneurial Spirit in Islamic Community Development* garnered **3,895 citations**, with an H-index of **32** and an average citation rate of **19.48 per article**.
2. Articles on *Islamic Community Development* accumulated **13,690 citations**, achieving an H-index of **63** and an average citation rate of **68.45 per article**.
3. Research on *Appropriate Technology* stood out with **81,884 citations**, demonstrating an H-index of **164** and a significantly higher average citation rate of **409.42 per article**.

Temporal Trends:

1. Publication peaks were observed in 2021–2022 for topics such as *Entrepreneurship* and *Islamic Community Development*, reflecting heightened academic interest during the pandemic's impact on socio-economic systems.

Network Visualization

The network visualization highlights three dominant clusters, each representing closely related themes:

1. **Cluster 1 (Red): Entrepreneurship and Islamic Community:**

Core nodes include *entrepreneurship*, *Islamic community*, *Islam*, and *community development*. The strong interconnection among these nodes reflects the centrality of entrepreneurial practices in Islamic socio-economic frameworks. This cluster suggests that entrepreneurship is deeply integrated into the

fabric of Islamic community development, emphasizing themes such as self-reliance, Islamic education, and economic empowerment.

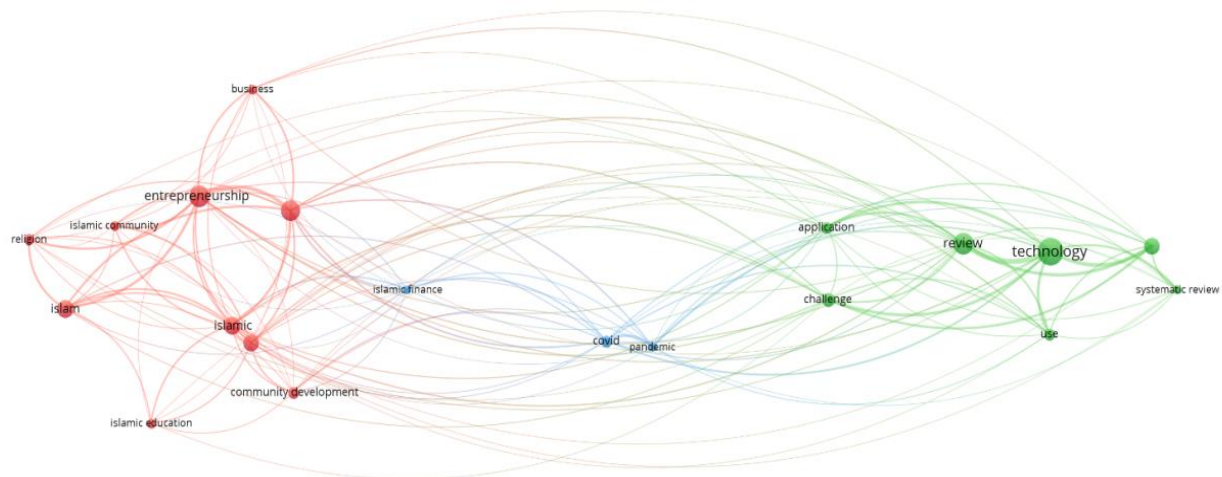
2. Cluster 2 (Green): Technology and Systematic Reviews:

Key nodes such as *technology*, *review*, and *application* indicate the growing role of systematic research in advancing appropriate technology. The emphasis on *application* and *use* demonstrates a focus on practical and context-specific technological solutions, aligning with sustainable development principles.

3. Cluster 3 (Blue): COVID-19 and Islamic Finance:

Emerging themes like *COVID*, *pandemic*, and *Islamic finance* highlight the pandemic's influence in shaping recent research trajectories. This cluster underscores the role of Islamic financial practices in mitigating socio-economic challenges during global crises.

Picture 2: Network Visualization from Vosviewer



Overlay Visualization

The overlay visualization provides temporal insights into the evolution of research themes:

1. Recent Focus Areas (2020–2024):

Nodes such as *technology*, *systematic review*, and *pandemic* appear in brighter colors, indicating their prominence in recent years. The shift towards topics like *digital transformation* and *systematic approaches* suggests an increasing academic interest in applying innovative solutions to Islamic socio-economic challenges.

2. Emerging Themes:

Topics like *Islamic finance* and *entrepreneurial innovation* gained traction during the pandemic, driven by the need for adaptive strategies.

Picture 3: Overlay Visualization from Vosviewer



Density Visualization

The density visualization highlights the concentration and maturity of research themes:

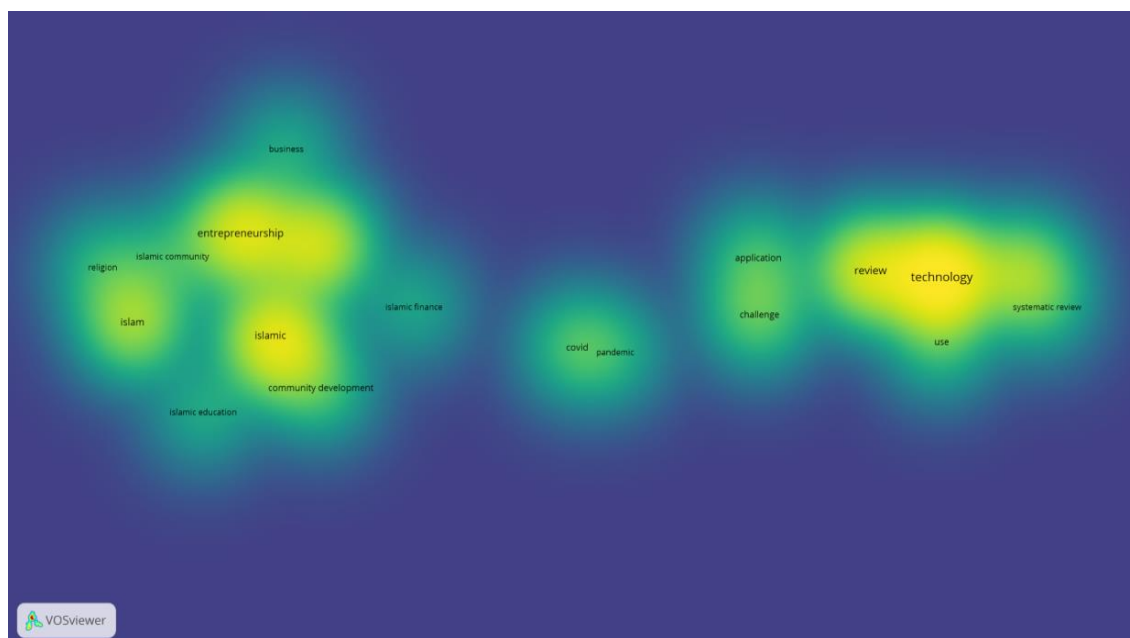
1. High-Intensity Areas:

Nodes such as *entrepreneurship* and *Islamic community* are concentrated in bright yellow, reflecting their established prominence in academic discourse. These areas represent well-explored fields, indicating robust theoretical and empirical foundations.

2. Underexplored Topics:

Nodes like *Islamic finance*, *appropriate technology in rural settings*, and *application* appear in cooler tones, suggesting research gaps and opportunities for further investigation.

Picture 4: Density Visualization from Vosviewer



DISCUSSION

The results of this study highlight the intricate interplay between appropriate technology, entrepreneurship, and sustainable development in Islamic communities. The findings emphasize not only the centrality of these themes but also their potential to address socio-economic challenges when integrated with Islamic values.

1. Entrepreneurship as a Catalyst for Development

Entrepreneurship emerges as a cornerstone of economic and social progress in Islamic societies, driven by the principles of self-reliance, job creation, and collective welfare. The network visualization underscores the interconnectedness of entrepreneurial practices with Islamic education and community development, reflecting their vital role in fostering empowerment. This highlights the dual function of entrepreneurship in Islamic contexts—not merely as a means for economic growth but as a moral imperative for societal betterment.

2. The Role of Appropriate Technology

Technology, particularly in its appropriate forms, is identified as a pivotal enabler of innovation and sustainability. The focus on tailored solutions ensures that technological advancements are aligned with local needs and values, enhancing their relevance and efficacy. The identified cluster on *Technology and Systematic Reviews* highlights the practical applications of technology in areas such as renewable energy and digital tools. These insights are consistent with global goals to achieve sustainable development while maintaining cultural and ethical congruence.

3. The Transformative Impact of the COVID-19 Pandemic

The pandemic has been a significant accelerator of digital transformation, particularly in the realms of Islamic finance and entrepreneurship. Themes such as *Digital Solutions* and *Islamic Finance* reveal how these systems adapted to the challenges posed by the pandemic. Islamic finance, in particular, demonstrated resilience and adaptability, serving as a vital tool for mitigating socio-economic disruptions. This underlines its potential to act as a sustainable and ethical financial system.

4. Opportunities for Future Research and Development

While advancements in these areas are evident, several gaps remain underexplored:

1. **Technology in Rural Islamic Communities:** The application of technology tailored to the unique needs of rural areas is underrepresented in current research.
2. **Integration of Islamic Finance with Technology:** Opportunities exist to explore how Islamic financial models can leverage technological advancements for greater inclusivity and efficiency.
3. **Crisis-Responsive Entrepreneurship:** There is limited exploration of how entrepreneurial practices in Islamic contexts can respond to global crises beyond the pandemic.

5. Broader Implications for Theory and Practice

1. **Theoretical Implications:** This study enriches the conceptual understanding of how Islamic values can shape technological and entrepreneurial models to align with sustainability goals.
2. **Practical Implications:** Policymakers and practitioners are encouraged to adopt a synergistic approach by combining technological innovation with Islamic principles to design impactful development strategies.

The discussion establishes that the convergence of appropriate technology and entrepreneurship, underpinned by Islamic values, can create meaningful solutions to modern socio-economic challenges. It calls for a collaborative effort to harness these synergies, ensuring that development initiatives are inclusive, sustainable,

and culturally aligned. This integration not only advances community well-being but also lays a foundation for ethical and transformative growth.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study provides a comprehensive analysis of the interplay between appropriate technology, entrepreneurship, and Islamic community development. The findings underscore that these domains, when synergized, can serve as powerful tools for addressing socio-economic challenges while adhering to Islamic values.

The bibliometric analysis highlights three key themes: (1) entrepreneurship as a moral and economic driver in Islamic communities, (2) the critical role of technology in providing tailored solutions for sustainability, and (3) the transformative impact of the COVID-19 pandemic on Islamic finance and digital innovation. These themes reveal both the progress and gaps in current research, emphasizing the importance of interdisciplinary approaches to community development.

Despite advancements, certain areas remain underexplored. Topics such as the application of technology in rural Islamic settings and the integration of Islamic finance with technological solutions offer promising avenues for future investigation. This study concludes that the alignment of technology and entrepreneurship with Islamic values holds the potential to drive inclusive and sustainable development.

Recommendations

- Policy Recommendations:** Policymakers should focus on creating frameworks that facilitate the adoption of appropriate technology in rural areas while ensuring its alignment with Islamic socio-economic principles. Investment in digital infrastructure and capacity building is essential to bridge the digital divide and empower marginalized communities.
- Research Directions:** Researchers should explore the intersection of Islamic finance and technological advancements to develop robust models for financial inclusion. Additionally, further studies on crisis-responsive entrepreneurship in Islamic contexts could provide valuable insights into resilience-building strategies.
- Practical Applications:** Practitioners and entrepreneurs are encouraged to adopt culturally aligned technological solutions that address the unique needs of Islamic communities. Emphasizing sustainability and ethical practices, these solutions can create long-term value for communities while fostering innovation.
- Collaborative Efforts:** Effective collaboration between policymakers, researchers, and practitioners is vital to ensure that the insights from this study are translated into actionable strategies. Such partnerships can help design interventions that leverage technology and entrepreneurship for the collective benefit of Islamic communities.

By synthesizing these conclusions and recommendations, this study offers a roadmap for leveraging the synergy between appropriate technology and entrepreneurship to achieve sustainable and inclusive growth within Islamic societies.

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