

Leveraging Waqf to Address Financing Constraints in Technical and Vocational Education and Training (TVET) Research and Innovation

Norshahira Kamarzaman, Azlin Alisa Ahmad, Mohd Zamro Muda

Research Centre for Sharia, Faculty of Islamic Studies, Universiti Kebangsaan Malaysia
Corresponding Author Email: azlinalisa@ukm.edu.my

To Link this Article: <http://dx.doi.org/10.6007/IJARPED/v13-i4/23285> DOI:10.6007/IJARPED/v13-i4/23285

Published Online: 18 November 2024

Abstract

Waqf a perpetual charitable endowment under Sharia law, has been identified as a powerful financial instrument for supporting diverse socio-educational initiatives. Technical and Vocational Education and Training (TVET), a crucial component of the educational framework, plays a pivotal role in cultivating a competent workforce and adapting to the dynamic demands of the industry. Financing constraints, particularly in the realms of research and innovation, pose significant challenges for TVET institutions. These financial barriers impede not only technological progress and innovation but also the overall quality of education delivered. Within the Islamic economic model, waqf is proposed as a solution to overcome these financial hurdles in TVET's research and innovation sectors. This study consolidates information from various sources, including scholarly articles, reports, and statistical analyses, to explore waqf's pivotal role in driving the Islamic economy through TVET financing. The paper also discusses the pivotal role of TVET institutions in enhancing employability and driving economic growth. It examines the funding limitations and their impact on research and innovation in TVET institutions. Furthermore, the study investigates the management of waqf assets and ensures effective investments in TVET education. The conclusions highlight waqf's vital role as a strategic financial resource that can alleviate funding shortages in TVET research and innovation, thereby enhancing human capital development and advancing the Islamic economic framework towards greater sustainability and inclusivity.

Keywords: Waqf, Islamic Economics, Research and Innovation, Funding Constraints, TVET

Introduction

The concept of waqf, a form of perpetual charitable endowment governed by Sharia principles, has long been recognized as a promising financial instrument in supporting various socio-educational initiatives (Kahf, 1998); (Çizakça, 2000)). In the context of enhancing the Islamic economic model, the role of waqf is increasingly recognized as a potential solution to address funding constraints in TVET's research and innovation sectors (Ismail Abdel Mohsin, 2013);(Haneef, Pramanik, Mohammed, Amin, & Muhammad, 2015). Beyond infrastructure development, waqf has the capacity to bolster initiatives aimed at enhancing the quality of education and skills development (Cizakca, 2000; Kahf, 2003).

The urgency of exploring waqf as an alternative financing mechanism is underscored by several critical challenges in the TVET sector. According to the World Bank (2023), an estimated funding gap of USD 40 billion exists in TVET institutions across developing countries, significantly hampering their ability to provide quality technical education. Traditional funding models, heavily reliant on government subsidies and student fees, have proven increasingly inadequate in meeting the expanding needs of TVET institutions. This financial constraint has led to outdated equipment, limited research opportunities, and a widening skills gap between graduates and industry requirements (Che Rus et al., 2023). Furthermore, the COVID-19 pandemic has exacerbated these challenges, with many TVET institutions struggling to maintain their operational quality while adapting to new technological demands (Hussain et al., 2021).

TVET represents a critical component of the educational framework, playing a pivotal role in cultivating a skilled workforce and adapting to the dynamic demands of the industry (UNESCO, 2022). However, the limited availability of funding not only impedes technological progress and innovation but also compromises the overall quality of education delivered by TVET providers (Ziderman, 2003); (Maclean & Lai, 2011). As a result, waqf is viewed as an alternative financing mechanism that can strategically support and sustain research and innovation activities within TVET institutions.

This study presents significant implications and benefits for multiple key stakeholders in the TVET ecosystem. For TVET institutions, understanding and implementing waqf-based financing models could provide a sustainable solution to their chronic funding challenges, enabling them to upgrade facilities, enhance research capabilities, and maintain competitive educational standards (Kamarzaman, Ahmad, Zain, & Muda, 2024).. Policymakers and government bodies would benefit from insights into alternative funding mechanisms that could reduce dependency on public funding while ensuring TVET sector sustainability (Bank, 2023). Industry partners stand to gain from improved alignment between TVET education and industry needs, as better-funded institutions can maintain up-to-date technology and provide more relevant training (Rus et al., 2023). Students, particularly those from underprivileged backgrounds, would benefit from enhanced access to quality technical education, as waqf-based funding could help reduce educational costs while improving educational quality (A. Ismail et al., 2018). Additionally, Islamic financial institutions and waqf administrators would gain valuable insights into innovative applications of Islamic financial instruments in the educational sector (Haneef et al., 2015). From a broader economic perspective, this research contributes to the development of a more resilient and sustainable TVET sector, which is crucial for workforce development and economic growth in Muslim-majority countries and beyond (UNESCO, 2022).

This study aims to provide a comprehensive examination of how waqf can play a crucial role in supporting Islamic economic advancement through the financing of research and innovation projects in the TVET education domain. By consolidating data from various sources, including scholarly literature, reports, and statistical analyses, this study seeks to deepen the understanding of waqf's potential in addressing funding challenges and driving innovation within the TVET sector.

The Pivotal Role of TVET Institutions in Enhancing Employability and Driving Economic Growth

TVET institutions play a crucial role in providing education that is relevant to industry needs. They educate students in technical and vocational skills that can be directly applied in the job market. According to statistics, the employability rate of TVET graduates is very high, with most data from public and private institutions showing it exceeds 95 percent. This indicates that TVET graduates are highly sought after in various sectors (Mumtaz Wanpa & Mat Isa, 2024). Furthermore, these institutions also help in reducing the unemployment rate by enhancing the employability of graduates.

TVET institutions offer education and skills training that are highly relevant to industry requirements. The programs offered cover various fields such as engineering, information technology, as well as services and management. The curriculum at these institutions is designed to provide practical training that enables students to apply their theoretical skills in the real world. According to data from the Ministry of Human Resources, 91.6% of graduates from TVET programs have successfully obtained employment within six months of completing their studies (Ahmad & Bon, 2023). The ease with which TVET graduates find employment is a reflection of the practical skills they acquire through the industry-aligned programs, which enhances their competitiveness in the job market. This demonstrates that the skills-oriented learning that is the core of TVET curricula provides a competitive advantage to graduates in the labor market (Syed Chear & Arifin, 2024). The high employability rate not only validates the value of TVET education but also proves the ability of graduates to contribute to economic growth and industrial development (Varma & Malik, 2023).

TVET also plays a role in enhancing the existing skills of individuals. The concept of lifelong learning emphasizes the importance of continuous renewal and improvement of skills, and TVET institutions are capable of providing a suitable platform for this purpose. TVET institutions also play a role in fostering a culture of lifelong learning among students (Wheelahan & Moodie, 2011). Through the delivery of flexible and responsive training programs, TVET can ignite the spirit of lifelong learning among individuals. The role of TVET in providing opportunities to acquire and enhance skills can increase the competitiveness of the workforce in an increasingly competitive job market (Agrawal & Agrawal, 2017). This is in line with the goal of lifelong learning to ensure that the skills possessed remain relevant to industry needs. Overall, this demonstrates that TVET institutions play a crucial role in cultivating lifelong learning through various initiatives they provide. This role is aligned with UNESCO's goal of making TVET an effective platform for lifelong learning.

However, in this context, it is important to note that the success of TVET graduates not only depends on practical skills and lifelong learning but also on their adaptability to technological changes and evolving market demands (Lee, Atherton, & Crosling, 2022). Therefore, TVET institutions need to continuously update their curricula and offer training that is relevant to the latest industry trends (Jamaludin, Hamid, & Alias, 2023). Additionally, close collaboration between TVET institutions and the industrial sector is crucial to ensure that the training programs offered can meet the actual demands of the job market. In line with the study conducted by Subri et al (2022), a proposed model for the Governance Structure of Engineering TVET in the Collaboration of Malaysian Engineering TVET Institutions and industry cooperation is suggested. With the right approach, TVET graduates not only will

remain relevant but also become essential assets in driving innovation and national competitiveness (Gyimah, 2020).

TVET institutions play a crucial role in research and innovation, particularly through close collaboration with industry. Various programs have been implemented by TVET institutions to create innovative solutions that support industry needs. According to a study by Pavlova (2009), TVET institutions should not only equip students with technical skills but also encourage project-based learning and research to address current challenges in the industry. Through this approach, students can develop problem-solving skills, critical thinking, and innovative skills required in the job market (Walsh, 2016). The case study findings by Ismail et al. (2018) demonstrate how the Work-Based Learning (WBL) program at Politeknik Sultan Salahudin Abdul Aziz Shah (PSA) and Unified Endpoint Management (UEM) have successfully integrated theoretical and practical learning and exposed students to a realistic industrial environment. This also shows how TVET institutions can collaborate with industry to create innovative solutions that support current industry needs.

The development of character and work ethics is an important aspect that must be emphasized in TVET education. Studies show that TVET institutions are not only responsible for equipping students with technical skills but also play a role in shaping the personality traits and professional behaviors required in the industry (Husain, Mokhtar, Ahmad, & Mustapha, 2010). Teaching about professionalism, responsibility and teamwork is part of the TVET program curriculum, as these skills influence the ability of students to integrate into the actual work environment (Syed Chear & Arifin, 2024). Furthermore, the implementation of soft skills development programs that focus on interpersonal skills has been proven not only to enhance the employability of graduates but also to increase their job satisfaction after entering the workforce (Zulkifeli, Ishar, & Hamid, 2022). Through a balanced emphasis on technical skills and employability skills, TVET institutions can produce graduates who are not only skilled but also possess the personality traits and work ethics required by employers, thereby contributing to increased productivity and competitiveness in the industry.

Overall, TVET institutions play a critical role in individual and societal development. They not only educate students in practical skills but also prepare them to meet the challenges in the ever-changing world of work. Through relevant training, support for economic development and emphasis on innovation, TVET institutions function as a key enabler in improving the standard of living and national development.

Funding Limitations and Their Impact on Research and Innovation in TVET Institutions

The constrained financial resources faced by TVET institutions directly impede the ability of lecturers to undertake research and develop innovations (Z. Ahmad, 2018); (Ahmad, 2018; (Shaliza Amira Sarif, Nurul Liyana Mahmud, & Nuraishahtul Akmar Kamaruddin, 2017); (Razaki, Nafi, & Nasir, 2020). Research and innovation activities play a pivotal role in ensuring the quality of vocational and TVET as they not only enhance the quality of teaching but also enable the curriculum and teaching methods to remain responsive to the constantly evolving industry needs.

However, the financial constraints experienced by TVET institutions such as polytechnics and community colleges present significant challenges for lecturers to conduct

research that requires access to the latest technology, materials and related resources. Studies have revealed that the limited financial allocations for innovation purposes pose a major obstacle for TVET institutions in their efforts to continuously improve the quality of education (Kamalian, Rashki, & Arbab, 2011); (Z. Ahmad, 2018); (Özan & Karabatak, 2020). These findings are corroborated by research that emphasizes the importance of access to financial resources in increasing lecturers' interest and engagement in research activities (Razaki et al., 2020).

The recent report from the Department of Polytechnics and Community Colleges (POLYCC) discloses a decline in the research funding allocated to lecturers at polytechnics and community colleges from 2018 to 2022 (JPPKK, 2023). This funding constraint results in a scarcity of research resources, limiting lecturers' access to the latest technology and hindering their potential to contribute to industrial and technological advancements. This situation is concerning as it can adversely impact the development of research and innovation activities within the TVET field. Due to the research funding constraints, lecturers at POLYCC are compelled to compete with their counterparts from Public Higher Education Institutions and Private to obtain funds from Malaysian Greater Research Network System (MyGRANTS) (Jantan, 2010); (Razaki et al., 2020). This situation places significant pressure on lecturers in conducting their research, potentially leading to burnout and decreased commitment to the organization (Ayub, 2008). Recent studies have also highlighted the key issues related to TVET, particularly the limitations of financing which indirectly contribute to the instability of these institutions (Mahmod, Sarif, & Hamzah, 2020); (Anyendah, Odundo, & Ganira, 2023). The lack of funds can hinder the provision of high-quality training to students, affect economic growth, and influence the quality of teaching and learning, thereby impeding comprehensive individual development.

Waqf's Pivotal Role in Driving the Islamic Economy through TVET Financing

Waqf, the Islamic endowment system, has emerged as a pivotal force in driving the Islamic economy by providing a continuous flow of funding for the development of economic projects that benefit the community as a whole. Historically, the concepts of waqf and the education of the Muslim community have been intrinsically linked. History has demonstrated the crucial role of education in cultivating quality individuals. For instance, in the 12th century, the higher education institution of hadith, Dar al-Hadith al-Nuriyyah, established in Damascus, Syria, through the waqf system, successfully produced prominent scholars like al-Dhahabi, al-Nawawi, Ibn al-Athir, and Abu Shamah (Nawi & Ismail, 2020). By channeling investments into the TVET sector, waqf enables the development of high-quality and market-relevant skills, which in turn contributes to sustainable and inclusive economic growth.

The waqf system, opens up invaluable opportunities for less-privileged individuals to access quality education and training through TVET institutions financed by waqf (Khan, Khan, & Khan, 2018). By offering courses tailored to industry needs and focusing on relevant skill development, these waqf-funded TVET programs provide students with quality education without the burden of financial constraints, helping enhance human capital development, strengthen their competitiveness, and improve their future employability prospects (Social Infrastructure, 2018). Studies have indicated that cash waqf is an effective method for providing assistance to financially incapable students, as waqf contributions not only directly benefit students by reducing their financial burdens and living costs but also positively impact

human capital development more broadly (Hilmi & Mohd Shafiai, 2022). Furthermore, cash contributions can be given as waqf to support research and innovation in TVET education, covering research costs, financing innovation programs, or providing financial assistance to students in technical and vocational fields. This waqf-based approach to TVET financing empowers the underprivileged by granting them access to quality education and skill development opportunities, which are crucial for enhancing their competitiveness and future employability, aligning with the broader objectives of the Islamic economic framework that emphasizes social justice, equitable distribution of wealth, and the holistic development of individuals and communities.

Furthermore, waqf can be utilized to provide financial assistance to individuals in need to cover the costs of education and training in the TVET sector. For example, waqf can be used to sponsor less-privileged students by offering financial aid such as scholarships or reasonable education loans (Maharani, Putra, & Sara, 2018); (Don, Yaacob, Langputeh, & Syahrudin, 2022). Waqf funds receive various types of assets, including cash, stocks, and financial assets, from both domestic and foreign sources, which are then used to assist in financing scholarships, loans, and various fund development activities, including investment activities. For instance, AlBukhari International University (AiU) in Kedah is one of the private higher education institutions in Malaysia that is fully financed by waqf funds (Maharani et al., 2018). The establishment of the UTM waqf fund is also used to provide scholarships to students as an alternative to existing educational assistance (Don et al., 2022). This helps reduce the financial burden experienced by these groups and enables them to access better educational opportunities.

The World Bank has been involved in providing financing loans since the 1950s, focusing on the vocational education sector. Considering the current importance of vocational institutions, there are proposals to develop the Waqf System in education as an alternative to the World Bank financing model (M. H. Ismail, Ekonomi, Pengurusan, & Muamalah, 2015). The waqf system offers significant opportunities to better strengthen vocational institutions in line with current needs, as it can be used to build quality educational infrastructure in the TVET sector, including the construction of modern facilities and the equipment required to carry out practical training in fields such as manufacturing, construction, or automotive services. By providing quality infrastructure, contributions through waqf of property or land to TVET educational institutions offer opportunities to finance the construction and maintenance of facilities for broader research and innovation activities (M. H. Ismail et al., 2015), presenting a viable alternative to the World Bank financing model and allowing for the creation of high-quality educational facilities and resources tailored to the specific needs of the vocational education sector, in alignment with the broader objectives of the Islamic economic framework.

In conclusion, waqf plays a crucial role in reducing socio-economic gaps by providing educational and training opportunities to less-privileged groups, enhancing the workforce capacity in the TVET sector. Through the provision of access to quality education, financial assistance, and quality educational infrastructure, waqf plays an important role, especially in the context of TVET education, where it opens opportunities for access to quality education without financial worries and supports research and innovation.

Waqf Management and Ensuring Effective Investments in TVET Education

Waqf management plays a crucial role in ensuring the effectiveness of waqf investments to drive the Islamic economy through TVET education, complying with related Malaysian laws. The waqf management process involves careful and efficient governance of waqf assets, including investment performance monitoring and appropriate risk management strategies, in line with legal regulations. Excellent implementation in improving the efficiency of waqf property financing management follows all waqf management laws contained in the respective State Islamic Religious Administration Enactments (Abdullah, 2020). The establishment of the Department of Waqf, Zakat and Hajj (JAWHAR) and Yayasan Waqaf Malaysia (YWM) aims to provide support to the State Islamic Religious Councils (MAIN) in implementing more efficient waqf property development (Md Salleh, Basnan, Wahid, & Mohd Harun, 2022); (Mohamad Dahalan, 2023). JAWHAR and YWM play a crucial role in ensuring that waqf property administration runs regularly, systematically, and effectively, contributing to the socioeconomic development of the ummah. Studies have also been conducted to improve the waqf reporting model and analyze disclosure practices to ensure clarity and transparency, which can help attract more donors and expand funding sources for TVET education development (Hisham & Muwazir, 2021). The appointment of Waqf Administrators and mutawalli (trustees) by the MAIN and Higher Education Institutions (HEI) respectively, based on qualifications and integrity, further enhances the efficiency and benefits of waqf management (Ab. Halim, Wahid, & Mohd Noor, 2023a). Ethical and effective waqf management can help increase public trust in waqf institutions and expand its positive impact on the development of the Islamic economy through TVET education.

Financing in the context of education remains a major focus in ensuring fair and quality access to education. In this context, waqf has emerged as an attractive financing model, especially in the TVET sector. Effective and Sharia-compliant waqf management ensures that funds are used in a way that meets specific needs and remains within the boundaries set by the original donor's intention. This makes waqf a very valuable tool in the Islamic economy to strengthen the stability and permanence of TVET education which will ultimately contribute to broader economic development through the provision of skilled and innovative labor. Therefore, expanding cooperation between TVET institutions, industry and waqf bodies and relaxing regulations that govern waqf, we can maximize the use of waqf as an innovative funding source. This step not only opens up more opportunities for research and development in TVET but also increases awareness and understanding of the advantages of waqf, strengthening the Islamic economy and overcoming funding limitations faced by this sector.

Research Finding

Firstly, waqf plays a strategic role in providing sustainable financing to drive the Islamic economy through TVET (Md Salleh et al., 2022). Effective waqf management that complies with Shariah principles is crucial to ensure the effectiveness of waqf investments in the development of the TVET sector (Ab. Halim, Wahid, & Mohd Noor, 2023b). Furthermore, bodies such as the Department of Waqf, Zakat and Hajj (JAWHAR) and Yayasan Wakaf Malaysia (YWM) have contributed in supporting the State Islamic Religious Councils (MAIN) to implement more efficient and systematic waqf property development (Mohamad Dahalan, 2023). Initiatives to improve the waqf reporting model and disclosure practices can also enhance clarity and transparency, thereby attracting more donors and financing sources for TVET education (Hisham & Muwazir, 2021).

Additionally, the appointment of qualified and integrity-driven Waqf Administrators and mutawallis plays a crucial role in enhancing the efficiency and benefits of waqf management (Ab. Halim et al., 2023b). Moreover, the comparison between waqf and endowment demonstrates the advantages of waqf as a sustainable financing tool in the Islamic economy, particularly in addressing the financing constraints in research and innovation in the TVET sector (Kassim, Embi, Haron, & Ibrahim, 2019); (Mozes & Steffens, 2021). Finally, there is potential to maximize the use of waqf as an innovative financing source for TVET education through wider collaboration between TVET institutions, industry and waqf bodies, as well as relaxation of regulations governing waqf (Usman & Ab Rahman, 2023); (Nguyen & Mogaji, 2022). Overall, waqf plays a vital role in reducing socioeconomic gaps and supporting the holistic development of human capital, in line with the objectives of the Islamic economy (Kaur & Kaur, 2022).

Conclusion

In conclusion, waqf plays a crucial role in reducing socioeconomic gaps by providing quality educational and training opportunities to the underprivileged, thereby enhancing the capacity of the workforce in the TVET sector. Through the provision of access to quality education, financial assistance, and good educational infrastructure, waqf plays a strategic role, particularly in the context of TVET education, where it opens up opportunities to access quality education without financial worries and supports research and innovation. By expanding collaboration between TVET institutions, industry and waqf bodies, as well as relaxing regulations governing waqf, the potential of waqf as an innovative financing source can be maximized. This step not only opens up more opportunities for research and development in TVET, but also increases awareness and understanding of the advantages of waqf, strengthening the Islamic economy and overcoming the financing constraints faced by this sector. For further research, the most relevant recommendation is to examine the long-term impact of waqf financing on human capital development and economic growth in the TVET sector. Understanding the long-term impact of waqf financing in the TVET sector is crucial to evaluate the effectiveness and sustainability of this financing model. The findings of this research can provide robust empirical evidence to encourage closer collaboration between waqf institutions, TVET providers and other stakeholders in leveraging the potential of waqf.

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