

Bridging the Skills Gap: The Role of Vocational Education in Developing Competent Human Resources for Sustainable Tourism



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KEY WORDS

Vocational Education, Skills Gap, Sustainable Tourism, Human Resources, Workforce Development.

ABSTRACT

The increasing demand for skilled human resources in the sustainable tourism sector highlights the critical role of vocational education in bridging the skills gap. This study aims to explore how vocational education programs can effectively equip individuals with the competencies needed for sustainable tourism development. Using a qualitative approach, the research employs literature review and library research methods to analyze existing studies, reports, and theoretical frameworks. The findings reveal that vocational education contributes significantly to the development of technical and soft skills, such as hospitality management, cultural sensitivity, environmental stewardship, and problem-solving abilities. Moreover, integrating sustainability principles into vocational curricula enhances students' awareness of ecological and socio-cultural impacts, fostering a workforce that aligns with global sustainability goals. The study identifies challenges, including outdated curricula, limited industry collaboration, and insufficient funding, which hinder the full potential of vocational education in addressing skills gaps. However, strategies such as strengthening partnerships between educational institutions and industry stakeholders, updating curricula to reflect current market needs, and investing in training infrastructure are crucial for overcoming these barriers. This research underscores the transformative potential of vocational education in shaping a competent workforce that can drive sustainable tourism practices. The findings provide practical insights for policymakers, educators, and industry leaders to enhance vocational education's contribution to the sustainable tourism sector.

1. INTRODUCTION

In the context of global economic growth, tourism has emerged as one of the most significant sectors driving job creation and economic development (Khan, 2018). As the demand for sustainable tourism grows, there is an increasing need for skilled professionals who can navigate the complexities of this evolving industry. The development of competent human resources is essential for sustaining the growth

of tourism while ensuring that it aligns with environmental, social, and cultural sustainability principles (Soini & Birkeland, 2014). Vocational education has been recognized as a crucial mechanism for equipping individuals with the necessary skills and competencies to meet the growing demands of the sustainable tourism sector. By providing specialized training, vocational education plays a key role in shaping the workforce that supports responsible tourism practices (Han,



2024).

Despite the recognition of vocational education's importance, a significant skills gap still persists in the tourism sector. Existing studies have highlighted the inadequacy of current vocational programs in addressing the specific needs of the sustainable tourism industry (Fernández-Villarán et al., 2024). While many vocational programs offer general tourism training, few have integrated sustainability-focused content or tailored their curricula to address the unique challenges of sustainable tourism (Slocum et al., 2019). There is a lack of comprehensive research that connects vocational education directly to the development of a competent workforce for sustainable tourism, especially in the context of emerging markets and developing regions (Paul, 2020).

The need for bridging the skills gap in sustainable tourism is urgent, as the tourism industry faces both workforce shortages and the increasing demand for professionals who are knowledgeable in sustainability practices (Kalauni et al., 2023). Governments and educational institutions must prioritize the integration of sustainability-focused vocational training programs to ensure that the tourism sector remains resilient and competitive in the long term (Sharma et al., 2021). This research aims to address the urgent need to explore how vocational education can better serve the sustainable tourism industry and bridge the existing skills gap.

Previous research has acknowledged the role of vocational education in the tourism sector, with a focus on general tourism skills and employment outcomes (Tushabe & Murimi, 2024). However, studies that specifically examine the integration of sustainability

principles into vocational education for sustainable tourism are limited. Some studies (Pásková & Zelenka, 2024) have discussed sustainability in tourism education but have not addressed how vocational education programs can bridge the skills gap. Furthermore, there is limited empirical data on the effectiveness of these programs in developing the competencies required by the tourism industry (Andrades & Dimanche, 2019).

This study brings a novel approach by directly linking vocational education programs with the development of competent human resources for sustainable tourism. By focusing on the intersection of sustainability and vocational training, this research aims to provide new insights into how vocational education can be restructured to better equip individuals with the necessary skills to contribute to the sustainable development of tourism. Additionally, it explores strategies for enhancing collaboration between educational institutions and the tourism industry to ensure that vocational training aligns with industry needs (Wen & Sumettikoon, 2024).

The purpose of this study is to explore the role of vocational education in addressing the skills gap within the sustainable tourism sector. Specifically, it aims to investigate how vocational education can equip individuals with the competencies needed for responsible tourism practices. The findings of this study will provide valuable recommendations for policymakers, educators, and industry stakeholders to improve vocational training programs, integrate sustainability principles, and foster a workforce capable of supporting the sustainable growth of the tourism industry (Han, 2024). Ultimately, this research will contribute to the development of a skilled and competent workforce that can drive the sustainable



development of tourism, benefiting both the industry and the communities it serves.

2. METHOD

This study employs a qualitative research approach to explore the role of vocational education in addressing the skills gap and developing competent human resources for sustainable tourism. The qualitative method is chosen to provide a comprehensive understanding of the phenomenon by analyzing perspectives, experiences, and contextual factors related to vocational education and sustainable tourism (Silva et al., 2024).

The research adopts a descriptive qualitative design, focusing on the exploration and interpretation of existing literature, policies, and theoretical frameworks. This approach enables the study to synthesize current knowledge and identify gaps in how vocational education supports sustainable tourism development (Fernández-Villarán et al., 2024).

Sources of Data

The data for this study are derived from two primary sources:

Primary Data: Interviews with experts in vocational education and sustainable tourism, including educators, policymakers, and industry practitioners.

Secondary Data: Academic journals, policy documents, official reports, and case studies related to vocational education, skills development, and sustainable tourism. These secondary sources are obtained from credible databases, government publications, and industry reports.

Data Collection Techniques

Literature Review: A systematic review of existing academic research, industry reports, and policy documents to analyze the current state of vocational education in the context of sustainable tourism.

Interviews: Semi-structured interviews with key stakeholders to gather qualitative insights into the challenges and opportunities of vocational training in sustainable tourism.

Document Analysis: Examination of curricula, training materials, and program evaluations to understand how vocational education incorporates sustainability principles and addresses industry-specific needs.

Data Analysis Method

The collected data are analyzed using thematic analysis, which involves the following steps:

Data Familiarization: Reviewing the collected data to gain an in-depth understanding of the content.

Coding: Identifying key themes, patterns, and concepts related to vocational education and sustainable tourism.

Theme Development: Categorizing the codes into broader themes such as skills development, sustainability integration, and industry collaboration.

Interpretation: Drawing conclusions based on the identified themes and synthesizing them to provide actionable recommendations.

Validity and Reliability

To ensure the validity and reliability of the findings, this study employs triangulation by cross-referencing data from multiple sources, including literature reviews, interviews, and document analysis. Peer debriefing and member checking are also conducted to validate interpretations and enhance the credibility of the research.



By using this methodology, the study aims to provide a holistic and evidence-based analysis of how vocational education can bridge the skills gap in sustainable tourism and contribute to the development of competent human resources.

3. RESULT AND DISCUSSION

The analysis reveals that vocational education plays a pivotal role in addressing the skills gap within the sustainable tourism sector. The demand for skilled professionals who can balance economic growth with environmental stewardship and cultural preservation has grown exponentially in recent years. Vocational education institutions are uniquely positioned to respond to this demand by equipping students with practical skills and theoretical knowledge tailored to the needs of the tourism industry. However, the study highlights critical challenges, including outdated curricula, limited integration of sustainability principles, and weak collaboration between educational institutions and industry stakeholders (Bischoff et al., 2018).

A key finding of this research is that vocational education significantly contributes to developing both technical and soft skills required for sustainable tourism. Technical skills, such as hospitality management, eco-tourism operations, and sustainable resource use, are vital for meeting the operational needs of the industry (Nordal & El-Thalji, 2021). Meanwhile, soft skills, including communication, problem-solving, and cultural sensitivity, are essential for fostering positive interactions between service providers and tourists (Liu et al., 2021). Integrating sustainability principles into vocational training not only enhances these skill sets but also instills a mindset of responsibility and

innovation among learners.

The analysis also underscores the importance of industry collaboration in ensuring that vocational education aligns with current market demands. Partnerships between vocational institutions and tourism stakeholders, such as hotels, travel agencies, and community-based tourism initiatives, provide students with hands-on experience and exposure to real-world challenges. These collaborations are instrumental in bridging the gap between theoretical knowledge and practical application, thereby enhancing the employability and competency of graduates (Ma'dan et al., 2020).

Furthermore, the study identifies barriers that limit the effectiveness of vocational education in sustainable tourism. These include insufficient funding for infrastructure development, a lack of qualified instructors familiar with sustainability practices, and limited access to updated training materials. Addressing these barriers requires a multi-stakeholder approach, involving policymakers, educators, and industry leaders. Strengthening policy frameworks to prioritize sustainability-focused vocational training, increasing investment in education infrastructure, and providing professional development opportunities for instructors are critical steps toward overcoming these challenges (Mitchell et al., 2015).

The discussion emphasizes that while vocational education has made significant strides in preparing human resources for sustainable tourism, there remains considerable room for improvement (Sakovska et al., 2021). Aligning vocational programs with global sustainability goals and fostering a culture of innovation within educational institutions are essential for building a resilient and adaptable workforce. The research concludes that



vocational education, when strategically enhanced and aligned with industry needs, can serve as a transformative tool in bridging the skills gap and driving the sustainable growth of the tourism sector. By doing so, it not only contributes to the development of competent professionals but also supports broader socio-economic and environmental objectives.

1. The Significance of Vocational Education in Sustainable Tourism

Vocational education plays a critical role in equipping human resources with the technical and practical skills necessary to meet the demands of sustainable tourism. Unlike traditional academic education, vocational training emphasizes hands-on learning experiences, directly preparing students for industry-specific roles. In the context of sustainable tourism, these programs are uniquely positioned to address the industry's requirements for environmentally conscious and culturally sensitive professionals. The integration of sustainability principles into vocational curricula ensures that learners not only develop the technical competencies required for their roles but also an ethical mindset geared toward responsible tourism practices.

Research highlights that vocational education institutions often act as a bridge between the theoretical understanding of sustainability and its application in the tourism sector. For example, students are taught not just the operational aspects of managing eco-friendly accommodations but also the broader implications of environmental conservation. This dual approach makes vocational education a vital tool in addressing the skills gap. However, its impact is contingent upon the alignment of training programs with industry needs and sustainability goals.

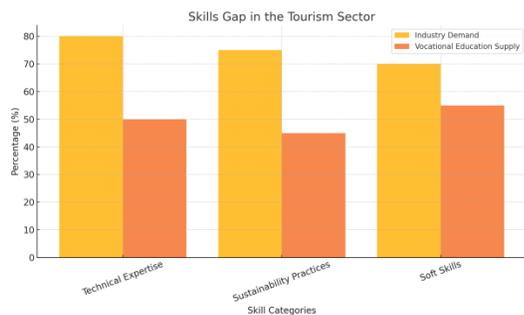
Despite its importance, the effectiveness of vocational education in sustainable tourism remains inconsistent across regions. Emerging economies, in particular, face challenges such as limited funding, outdated facilities, and insufficiently trained instructors, which hinder the ability of vocational institutions to prepare students adequately. Overcoming these challenges requires collaborative efforts from policymakers, educators, and industry stakeholders to ensure vocational training aligns with global sustainability standards.

Vocational education is not merely a channel for skills development but a transformative tool for promoting sustainable practices within the tourism sector. By instilling sustainability values alongside technical expertise, vocational programs can significantly contribute to the long-term resilience and competitiveness of the tourism industry. These programs need to be continuously updated to reflect evolving industry trends and sustainability priorities.

2. The Role of Vocational Education in Bridging the Skills Gap

The skills gap in the tourism sector is a pressing issue, particularly as sustainable tourism continues to grow in importance. Many tourism enterprises report difficulties in finding skilled professionals who possess the necessary technical expertise and an understanding of sustainable practices. Vocational education is uniquely positioned to address this issue by offering targeted training programs that cater to the specific needs of the tourism industry.





Grafik 1, Skills gap in the tourism sector

The bar chart illustrates the significant skills gap in the tourism sector by comparing industry demand and vocational education supply across three critical skill categories: Technical Expertise, Sustainability Practices, and Soft Skills. The data highlights the disparity between the required and available competencies, emphasizing the urgent need for targeted training to address these gaps.

Technical Expertise: The demand for professionals with strong technical skills in areas such as hospitality management, tourism operations, and resource efficiency stands at 80%. However, the current supply from vocational education programs only meets 50% of this demand. This discrepancy underscores the need to enhance vocational curricula to include advanced technical training.

Sustainability Practices: As sustainable tourism gains importance, enterprises require professionals adept in sustainability principles, such as eco-friendly operations and cultural preservation (Smith II, 2021). Industry demand for these skills is 75%, but the supply from vocational training programs lags significantly at 45%. This gap reflects the inadequate integration of sustainability topics in vocational education.

Soft Skills: Communication, cultural sensitivity, and problem-solving abilities are essential in

tourism. While 70% of enterprises emphasize the importance of these skills, vocational education currently supplies only 55%, revealing a need for a stronger focus on interpersonal skill development in training programs.

Analysis: The chart highlights that vocational education is not yet fully aligned with the specific needs of the tourism industry. The gaps in sustainability practices and technical expertise are particularly concerning, given the growing global emphasis on sustainable tourism (Weaver, 2007). Bridging these gaps requires curriculum reforms, industry collaborations, and investments in training infrastructure to produce a workforce capable of supporting the sustainable growth of the tourism sector.

One of the main advantages of vocational education is its ability to adapt to market demands quickly. Curricula can be revised to incorporate new sustainability standards and industry practices, ensuring that graduates are equipped with up-to-date skills. For example, courses on renewable energy in tourism operations or waste management in hospitality can prepare students for roles that contribute to the sustainability of the industry (Leal Filho et al., 2019). These specialized programs directly address the gap between industry expectations and the existing workforce's competencies.

Moreover, vocational education provides practical training opportunities through internships, apprenticeships, and partnerships with tourism enterprises. These collaborations allow students to gain hands-on experience and understand the operational challenges of sustainable tourism. Such exposure not only enhances their employability but also ensures that they are ready to contribute effectively

from day one of their employment.

Despite these strengths, challenges remain. Many vocational institutions lack the infrastructure and resources needed to provide comprehensive training (Borg et al., 2022). Limited access to updated learning materials and insufficient collaboration with industry stakeholders further exacerbate the skills gap. Addressing these issues requires a concerted effort to strengthen the vocational education system, ensuring that it can meet the evolving needs of the tourism sector.

Closing the skills gap in sustainable tourism is not only about improving individual employability but also about enhancing the overall capacity of the industry to adapt to sustainability challenges. Vocational education must therefore be seen as a strategic investment in the future of tourism.

3. Integrating Sustainability into Vocational Curricula

Sustainability is a cornerstone of modern tourism, and its integration into vocational curricula is essential for preparing a workforce that can meet the challenges of sustainable development. However, many vocational programs continue to focus on traditional aspects of tourism, such as hospitality and travel management, without adequately addressing sustainability concerns.

Incorporating sustainability into vocational training requires a shift in both content and pedagogy. Courses should include topics such as environmental conservation, cultural heritage preservation, and sustainable business practices. These subjects can be taught through case studies, project-based learning, and community engagement initiatives, which allow students to see the real-world implications of

sustainability in tourism.

One successful example of sustainability integration is the inclusion of modules on renewable energy use in tourism facilities. Students learn not only the technical aspects of implementing solar or wind energy systems but also the economic and environmental benefits of such practices. Similarly, teaching waste reduction strategies and circular economy principles helps students understand how to minimize the ecological footprint of tourism operations.

Despite the clear benefits of sustainability-focused curricula, challenges persist. In many vocational institutions, instructors lack the training or expertise needed to teach these topics effectively. Additionally, there is often resistance to curriculum changes due to a lack of understanding of the importance of sustainability in tourism. Overcoming these barriers requires professional development for educators and a stronger emphasis on sustainability in national education policies.

The integration of sustainability into vocational curricula is not merely an academic exercise but a practical necessity. By preparing students to navigate the complexities of sustainable tourism, vocational education can play a pivotal role in fostering a tourism sector that is both economically viable and environmentally responsible.

4. Industry Collaboration as a Catalyst for Success

Collaboration between vocational institutions and industry stakeholders is essential for bridging the skills gap and ensuring the relevance of vocational education programs. Such partnerships provide a two-way exchange of knowledge and resources, enabling



institutions to align their training with industry needs while allowing businesses to access a pipeline of skilled professionals.

Work-based learning opportunities, such as internships and apprenticeships, are one of the most effective forms of collaboration. These programs give students hands-on experience in real-world settings, helping them understand the operational and strategic aspects of sustainable tourism. For instance, partnerships with eco-lodges or community-based tourism initiatives allow students to apply their learning to practical challenges, such as managing resource efficiency or promoting local cultural heritage.

Industry collaboration also plays a critical role in curriculum development. By involving tourism stakeholders in the design and review of training programs, vocational institutions can ensure that their offerings remain relevant to the evolving demands of the sector. For example, input from industry professionals can help identify emerging skills needs, such as expertise in digital marketing for sustainable tourism or knowledge of carbon offsetting programs.

However, such collaborations are not without challenges. Mismatched expectations, a lack of communication, and resource constraints often hinder the establishment of effective partnerships. Addressing these issues requires structured frameworks that facilitate ongoing dialogue and cooperation between vocational institutions and industry stakeholders.

Industry collaboration is not just a means of enhancing vocational education but a strategic approach to building a more resilient and sustainable tourism workforce. By strengthening these partnerships, the tourism

sector can better address its skills gaps and ensure its long-term sustainability.

5. Overcoming Barriers to Effective Vocational Education

While vocational education holds great promise for bridging the skills gap in sustainable tourism, significant barriers must be addressed to unlock its full potential. These include insufficient funding, outdated facilities, and a lack of trained instructors, all of which undermine the quality and effectiveness of vocational training programs.

Funding is a critical challenge, as many vocational institutions operate on limited budgets. This constraint affects their ability to invest in modern equipment, updated learning materials, and professional development for instructors. Governments and industry stakeholders must prioritize investment in vocational education to ensure that institutions have the resources needed to deliver high-quality training.

Another barrier is the disconnect between vocational curricula and industry needs. Many training programs are based on outdated models that do not reflect the current demands of sustainable tourism. Bridging this gap requires ongoing collaboration between vocational institutions and industry stakeholders, as well as regular curriculum reviews to incorporate emerging trends and technologies.

The lack of qualified instructors also poses a significant challenge. Many educators lack the expertise needed to teach sustainability-focused courses, which limits the effectiveness of vocational programs. Addressing this issue requires targeted professional development initiatives and the recruitment of industry



professionals as guest lecturers or trainers.

Despite these barriers, vocational education remains a powerful tool for addressing the skills gap in sustainable tourism. By tackling these challenges through strategic investments and collaborative efforts, vocational institutions can significantly enhance their contribution to the development of a competent and sustainability-oriented tourism workforce (Syafuruddin et al., 2024).

4. CONCLUSION

Vocational education serves as a vital mechanism for bridging the skills gap and developing competent human resources needed for sustainable tourism. By integrating sustainability principles into curricula, fostering collaboration with industry stakeholders, and providing practical, hands-on training, vocational education equips individuals with the technical and soft skills required to navigate the complexities of sustainable tourism. However, challenges such as outdated curricula, limited resources, and insufficiently trained instructors highlight the need for strategic investments and policy support to enhance the effectiveness of vocational training programs. Addressing these issues through multi-stakeholder partnerships and continuous curriculum updates can ensure that vocational education not only meets current industry demands but also contributes to the long-term resilience and sustainability of the tourism sector.

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