Available online at: https://jurnal.integrasisainsmedia.co.id/index.php/JTHTM
Journal of Tourism, Hospitality and Travel Management
Volume 2 Nomor 1, 2024: 58-72
DOI: 10.58229/jthtm.v2i1.317

Strategic Formulation for Tour Guide Competency Development: An Integrated AHP–TOWS Approach

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Abstract

As tourism becomes increasingly experience-driven and sustainability-focused, the role of tour guides has evolved into a strategic touchpoint that shapes visitor perceptions and destination image. This study aims to formulate and prioritize effective strategies for tour guide competency development using an integrated Analytical Hierarchy Process (AHP) and quantitative TOWS matrix approach. A panel of twelve experts representing government, training institutions, and tourism practitioners participated in structured pairwise comparisons and SWOT-based strategy scoring. The AHP results revealed that experiential learning-based training and national certification systems are the most critical and high-impact strategies supported by public-private partnerships and emerging digital tools. Through the TOWS mapping, each strategy was evaluated for its strategic fit within Strengths, Weaknesses, Opportunities, and Threats (SWOT), resulting in a prioritized roadmap for implementation. The study concludes that a tiered, context-sensitive strategy—grounded in institutional collaboration and adaptive learning models—offers a sustainable path to professionalizing the guiding sector. This research provides actionable insights for policymakers, tourism educators, and destination managers seeking to build resilient and skilled human capital in tourism.

Keywords: Tour Guide Competency; Strategic Development; Analytical Hierarchy Process (AHP); TOWS Matrix; Sustainable Tourism

A. INTRODUCTION

Tour guides serve as cultural ambassadors and facilitators of meaningful travel experiences, playing a central role in enhancing visitor satisfaction and destination image in today's increasingly competitive and experience-driven tourism industry. Their competencies must go beyond historical and cultural knowledge to include soft skills such as crisis management, multilingual communication, and intercultural sensitivity (Hermanto et al., 2023; Suryana, 2022). However, professional development opportunities for tour guides remain limited, necessitating strategic approaches to competency enhancement. Innovative, experience-based learning methods—supported by technological advancements such as 3D holographic simulations—have proven effective in improving decision-making and professional preparedness (Abdelhamid, 2020; Hild, 2023). Additionally, mindful communication and context-aware language training are crucial in fostering cross-cultural engagement, directly correlating with tourist satisfaction and destination competitiveness (Asmin, 2022; Gesimba et al., 2023). Comprehensive competency development requires an integrated model that blends experiential training, technology integration, and soft skill enhancement to produce professional tour guides who can meet modern industry standards and deliver authentic tourism experiences.

In light of rapid global tourism growth—especially in developing countries—the role of tour guides as key human capital has become increasingly prominent. Despite their central function in shaping visitor perceptions and service quality, a persistent skills gap remains between existing competencies and modern tourism standards, driven by shifts in traveler behavior, digitalization, and sustainability imperatives (Amoako et al., 2021; Thukia et al., 2022). Structured training programs and professional certifications are critical to equipping

guides with relevant knowledge, particularly in sustainable tourism and destination management (Eyisi et al., 2020; Pian et al., 2022). For example, (Hapsari & Pramono, 2023) highlights the role of female guides in Borobudur in promoting sustainable practices, underlining the need for gender-sensitive training support. Collaborative approaches among stakeholders—including government, private sector, and local communities—are also essential for fostering a responsive and sustainable tourism infrastructure (Lestari et al., 2022; Thukia et al., 2022; Wondirad et al., 2020). (Gori et al., 2021) demonstrate that inclusive, community-based planning—as seen in Tuscany—can enhance public engagement and align tourism development with societal needs. By integrating structured training, certification, and stakeholder collaboration, tour guides can evolve into empowered change agents who elevate service standards and support the long-term success of the tourism industry (Islahuddin et al., 2022; Lambulira & Bello, 2022; Roem, 2023; Roxas et al., 2020; Susanti et al., 2022).

Although tour guides serve as the initial and often most influential point of contact for tourists—shaping visitor satisfaction and destination image—the profession continues to face persistent challenges such as inconsistent training, lack of standardization, and limited career development opportunities (Bunakov et al., 2020; Hwang et al., 2020). Elevating tour guiding to a recognized and professional field requires a multi-tiered strategy encompassing formal accreditation, structured certification, and collaborative stakeholder engagement (Düz, 2023). Rigorous certification programs focusing on communication, cultural literacy, and crisis management have shown direct links to enhanced tourist satisfaction (Gesimba et al., 2023), while experience-based training has proven effective in developing both technical and interpersonal skills crucial to sustainable tourism (Hild, 2023; Shi et al., 2023). Furthermore, in sustainability contexts, guides can serve as mediators between tourists and host communities, fostering mutual understanding and local benefit (Güzel et al., 2020). Stakeholder collaboration—including with tourism authorities and local communities—also strengthens training relevance and ensures alignment with broader destination goals (Orabi & Fadel, 2020; Seyitoğlu, 2020). Altogether, a holistic approach integrating accreditation, experiential education, and multi-level collaboration is essential to build a competent, respected tour-guiding profession aligned with the needs of a sustainable tourism industry (Bunakov et al., 2020; Gesimba et al., 2023; Hwang et al., 2020).

The development of tour guide competencies is deeply intertwined with the broader policy and institutional frameworks within which they operate. In many regions, fragmented regulations, overlapping mandates, and weak enforcement of standards hinder the professionalization of the guiding sector (Fadli et al., 2022; Firdaus et al., 2021). A multi-level governance approach—integrating tourism boards, training institutions, and private stakeholders—is essential for designing long-term, holistic strategies for competency enhancement (Haq et al., 2023). Best practice cases, such as the rural tourism development in Pujonkidul, Indonesia, highlight the pivotal role of local governments in coordinating diverse interests and fostering inclusive tourism growth through active policy engagement (Firdaus et al., 2021). Furthermore, successful collaboration between government bodies, local communities, and the private sector has proven to enhance Sustainability, accessibility, and stakeholder participation (Hamdani et al., 2023; Wondirad et al., 2020). To elevate guide professionalism, institutional support must go beyond training and certification, incorporating comprehensive regulatory frameworks and participatory planning mechanisms. As shown by (Ariyani et al., 2023), such collaborative models not only raise the professional standard of guides but also contribute to the improved image and competitiveness of tourism destinations. Ultimately, supportive and integrated policies are critical to overcoming current challenges and fostering a professional, sustainable, and resilient tourism sector.

As tourism evolves with technology and changing traveler expectations, the role of the tour guide is being redefined. Beyond narrating facts, guides are expected to curate immersive experiences, adapt to diverse cultural needs, and engage through digital platforms. This dynamic shift calls for innovative strategies in competency development, including blended learning, AI-assisted training, and emotional intelligence coaching. This paper explores how innovation can be integrated into training and policy design to future-proof the tour-guiding profession.

B. LITERATURE REVIEW

The Evolving Role of Tour Guides in Modern Tourism

Tour guides have undergone a significant transformation from traditional information providers to multidimensional professionals who facilitate immersive experiences, mediate cultural exchange, and emotionally engage with tourists. Their evolving role includes storytelling, conflict resolution, and fostering cross-cultural understanding in an increasingly experience-oriented and sustainability-focused tourism industry (Cheng et al., 2020; Ren et al., 2023). (Hwang et al., 2023) emphasize that effective guides do more than deliver facts—they serve as bridges between tourists and local communities, directly influencing visitor satisfaction and the perceived quality of the tour. (Cheng et al., 2020) further define four key dimensions of effective tour guiding—playfulness, enthusiasm, creativity, and engagement—all of which contribute significantly to the depth and memorability of the tourist experience.

Beyond enhancing tourist enjoyment, modern tour guides are emerging as active agents of social mediation and Sustainability. According to (Liljeblad, 2020), guides can translate and promote human rights values, shaping tourists' understanding of the socio-cultural environments they encounter. (Philemon & Jani, 2021) also note that tour guides play a pivotal role in fostering destination sustainability through interpretive practices that influence tourist behavior. This transformation highlights the need for continuous skill development and professional training, ensuring that guides are not only knowledgeable but also socially and culturally responsive to the dynamic expectations of the global tourism market (Kafy, 2021; Ren et al., 2023).

Competency Frameworks in Tour Guiding

Tour guiding competencies are typically divided into two key domains: hard skills and soft skills. Hard skills involve factual knowledge of history, geography, cultural heritage, and environmental Sustainability, while soft skills encompass interpersonal communication, emotional intelligence, adaptability, and problem-solving abilities (Kapa et al., 2022). Many countries have adopted national or regional competency frameworks to ensure service quality and consistency; however, implementation often varies depending on local contexts and institutional support (Zheng-han, 2022). (Kapa et al., 2022) emphasize that despite the critical role of soft skills, they are frequently underrepresented in tour guide training curricula. Their research advocates for early integration of soft skill development into educational programs to better prepare guides for real-world scenarios. (Hwang et al., 2020) also call for training that addresses the increasing diversity of tourist demographics and focuses on developing effective communication and cross-cultural adaptability.

Further supporting this view, (Hild, 2023) highlights the benefits of experiential learning methods in strengthening a guide's ability to manage complex and dynamic tourism situations. A balanced competency framework—incorporating both hard and soft skills—is thus essential for delivering high-quality tourism experiences and enhancing tourist satisfaction. Nonetheless, challenges remain in the consistent application of such standards across regions. (Zheng-han, 2022) notes existing weaknesses in the practical implementation of competency models, particularly in their adaptation to specific learning and operational contexts. This points to a pressing need for improved regulatory mechanisms and practical training standards. By developing a well-integrated competency framework supported by enforceable regulations, tour guides can be elevated to a more professional and effective role in the tourism ecosystem (Gesimba et al., 2023; Hapsari & Pramono, 2023).

Training and Professional Development Models

Effective training and professional development models are essential to bridge the gap between existing tour guide competencies and the evolving demands of the tourism industry. Several approaches are highlighted in the literature, including formal education, short-term training, on-the-job mentoring, and experiential learning (Hild, 2023). Blended learning—integrating theoretical instruction with field-based application—has been shown to improve preparedness for real-world guiding scenarios significantly (Huang et al., 2023). Experiential training, in particular, is emphasized for developing competencies in risk management and safety,

especially in unpredictable environments common in tourism settings (Hild, 2023). The integration of advanced technologies such as 3D holograms and remote learning platforms further enhances training efficiency and adaptability, offering interactive and accessible options for guide education, especially in response to challenges like the COVID-19 pandemic (Abdelhamid, 2020).

Digital tools are playing an increasingly vital role in tour guide training, offering scalable and flexible solutions. (Nazlı, 2020) notes the potential of e-learning platforms to overcome logistical constraints, providing efficient access to training regardless of location. The incorporation of virtual reality (VR) technologies also introduces immersive learning environments that simulate real-world experiences, although adoption varies across contexts (Varelas, 2022). In addition, collaborative training models—such as peer-to-peer interaction and mentorship—are valuable for fostering communication skills and contextual understanding (Huang et al., 2023). These methods promote deeper, more integrated learning by encouraging knowledge exchange between experienced guides and trainees. Ultimately, the combination of theoretical, practical, and digital strategies forms a comprehensive training framework that equips tour guides with the tools they need to meet the increasingly complex challenges of the modern tourism landscape.

Certification and Accreditation Systems

Certification and accreditation systems play a pivotal role in legitimizing the tour-guiding profession by establishing standardized benchmarks for knowledge, behavior, and service delivery. National and international tourism authorities have implemented structured frameworks that assess tour guides' qualifications to ensure consistency and quality. Such systems not only enhance the credibility of individual guides but also contribute to the broader professionalization of the tourism industry. For instance, in Russia, the Ministry of Culture and Tourism oversees a formal accreditation process that certifies guides, interpreters, and instructors, ensuring they possess sufficient knowledge to accurately convey the nation's cultural heritage (Bunakov et al., 2020). These formal mechanisms provide a foundation for assessing competence and maintaining service standards.

Despite the evident benefits, disparities in access, recognition, and enforcement of certification standards remain pressing challenges. Variations in how certification is implemented across different regions can affect tourists' perceptions of quality and erode trust in guiding services. Moreover, gaps in accessibility to training and certification—especially in remote or underserved areas—limit the ability of guides to meet professional expectations. A more coordinated, inclusive approach is therefore necessary to ensure equal access to certification opportunities and to promote higher levels of professionalism within the sector. Ultimately, a robust and equitable certification and accreditation system is essential for elevating the status of tour guides and enhancing the overall quality of the tourist experience.

Institutional and Policy Support

The institutional framework within which tour guides operate significantly shapes their professional development. In many countries, fragmented governance, lack of stakeholder coordination, and weak policy frameworks hinder systematic efforts to enhance guide competencies (Ross, 2020). Increasingly, scholars and policymakers recognize the importance of collaborative governance—bringing together public agencies, private sector actors, and local communities—to establish inclusive, consistent, and responsive training and certification systems (García & García, 2021). Given the tour guide's critical role in heritage interpretation and direct visitor interaction, integrated program design and institutional support have become essential components of sustainable tourism development (Anđelković et al., 2022). For instance, (Suryana, 2022) emphasizes the need for official policies supporting periodic training and evaluation to enhance interpretive services. Similarly, (Bunakov et al., 2020) highlight the value of accreditation in reinforcing the professional status of guides and improving tourist trust and perception.

Nonetheless, access disparities in training and uneven recognition of credentials remain key challenges. There is a growing call for collaborative approaches that leverage contributions from all stakeholders—government, private sector, and communities—to create positive impacts on both the tourist experience and destination sustainability (ALmasoodi & Rahman, 2023; Orabi & Fadel, 2020). Literature also stresses the importance of training programs that are responsive to local conditions and industry dynamics, making them more effective and contextually relevant (Alrawadıeh, 2021). Ultimately, strong institutional and policy support is crucial to overcoming these challenges, advancing guide competencies, and ensuring high-quality service delivery in the tourism sector (Kwon, 2022; Ningsih et al., 2020).

The Importance of Sustainability and Local Participation

Sustainability has emerged as a central priority in tourism development, positioning tour guides as key agents in promoting environmentally conscious behavior and advocating for the preservation of local culture and community well-being (Rochman et al., 2023; Sari et al., 2022). Tour guides who possess a deep understanding of local values and traditions are better equipped to mediate between tourists and host communities, fostering responsible tourism practices. Literature increasingly emphasizes the importance of inclusive development strategies that integrate local stakeholder perspectives in training and policy design. For instance, (Kim et al., 2021) highlight that community participation at the grassroots level is essential for the long-term success of tourism initiatives, while (Li et al., 2021) stress the need for collaboration between tourism operators and local communities to support cultural Sustainability.

Local communities play a vital role in ensuring the Sustainability of tourism practices. According to (Rochman et al., 2023), genuine community involvement is a prerequisite for sustainable tourism development. (Sari et al., 2022) further point out that the absence of local participation in village tourism projects often leads to underachievement of development goals. In this context, tour guides act as cultural intermediaries, helping to shape respectful and immersive experiences for visitors while aligning tourism activities with the aspirations of residents. As such, tour guides need to receive training that prepares them to facilitate these interactions and understand the socioeconomic and environmental challenges faced by host communities (Mujanah & Candraningrat, 2023). Ultimately, prioritizing Sustainability and community engagement not only enriches the tourist experience but also fosters positive social and economic outcomes for destination communities (Chan et al., 2021; Wiweka et al., 2020).

C. METHODS

This study adopts an integrated decision-making methodology by combining the Analytical Hierarchy Process (AHP) with a quantitative TOWS matrix to identify and prioritize strategic recommendations for developing tour guide competencies. The AHP method was selected for its ability to structure complex decision problems and incorporate expert judgment in prioritizing multiple criteria and alternatives. The approach was designed to systematically assess and rank strategic options based on their relevance, effectiveness, and alignment with industry needs. At the same time, the TOWS analysis provided a strategic framework for aligning these options with the internal and external factors affecting the tourism sector.

The research process began with the formulation of a hierarchical AHP structure comprising three levels: the main goal (selecting the most effective strategies for tour guide competency development), five decision criteria (relevance to industry needs, cost-effectiveness, ease of implementation, sustainability impact, and community participation), and five alternative strategies (experiential learning-based training, national certification programs, digital and VR learning, community-based apprenticeship, and public-private training partnerships). A panel of twelve experts was purposively selected, representing tourism trainers, government tourism officials, guide association leaders, and academics. Each expert conducted pairwise comparisons of both criteria and strategic alternatives using Saaty's 1–9 scale. To ensure the reliability of the input data, consistency ratios (CR) were calculated for each matrix; any matrix with a CR greater than 0.1 was revised in

consultation with the expert. The data from all participants were aggregated and analyzed using decision-making software such as Expert Choice or Super Decisions to calculate the local and global weights of each strategy.

After identifying the most prioritized strategies via AHP, the study proceeded to the formulation stage using a quantitative TOWS matrix. First, a SWOT analysis was conducted through expert workshops and literature synthesis, identifying key strengths (e.g., rich cultural resources, supportive policy environment), weaknesses (e.g., inconsistent training quality, lack of standardization), opportunities (e.g., digital innovation, ecotourism trends), and threats (e.g., high guide turnover, informal/unlicensed guiding practices). These SWOT factors were cross-tabulated in a TOWS matrix, producing four strategic zones: SO (strength-opportunity), WO (weakness-opportunity), ST (strength-threat), and WT (weakness-threat). Strategic alternatives resulting from the AHP were then mapped into the TOWS framework. Experts assigned relevance scores (ranging from 1 to 5) for each strategy's alignment with specific SWOT combinations. The final scores were derived by multiplying the global weights from AHP with the relevance scores from TOWS, producing a ranked list of strategies that are not only effective and feasible but also strategically responsive to the internal and external conditions facing the tourism sector. Through this AHP–TOWS integration, the study was able to deliver a strategic roadmap for tour guide competency development that is both evidence-based and contextually grounded. This method ensures that the recommended strategies are validated by expert knowledge, responsive to industry dynamics, and adaptable to diverse policy and institutional settings. Ethical approval was obtained prior to data collection, and all participants were informed of their rights, with confidentiality and voluntary participation assured throughout the study.

D. RESULTS AND DISCUSSIONS

Expert Panel Profile

The Analytical Hierarchy Process (AHP) was conducted with the participation of 12 expert panelists selected through purposive sampling based on their extensive experience and strategic involvement in the field of tourism, tour guide development, and vocational training. The panel consisted of a diverse group of stakeholders, including three senior government officials from regional tourism boards, four professional trainers affiliated with certified tourism training institutions, three senior tour guides with more than 10 years of field experience, and two academics specializing in tourism and human resource development. All participants had a minimum of five years of relevant experience and demonstrated familiarity with competency frameworks or policy development related to tour guiding. The panelists represented different geographic and institutional backgrounds to ensure a broad perspective, with coverage from both urban and rural tourism destinations. Their combined insights provided a comprehensive understanding of the practical challenges and policy gaps in developing tour guide competencies across varying contexts. Each expert was fully briefed on the research objectives, AHP process, and evaluation criteria, and they were involved in both the pairwise comparison phase for the AHP and the strategy validation phase for the TOWS analysis. All participants agreed to the terms of confidentiality and gave informed consent prior to their involvement in the study.

Pre-AHP Deliberation: Expert Agreement on Evaluation Dimensions

Before initiating the Analytical Hierarchy Process (AHP), a structured deliberation was conducted with the expert panel to ensure collective agreement on the key criteria and strategic alternatives to be evaluated. This step was essential to guarantee that the AHP process would reflect not only theoretical frameworks but also the experiential knowledge and contextual understanding of professionals actively involved in tourism development and guide training. The expert panel—comprising government tourism officials, certified training providers, senior tour guides, and tourism academics—participated in a moderated session designed to surface practical considerations, regional disparities, and institutional challenges. During the session, panelists reviewed initial proposals derived from the literature and validated or revised them based on their field experience.

Through open discussion and consensus-building techniques (e.g., guided prompts and group ranking exercises), the panel finalized both the evaluation criteria and strategic alternatives to be used in the subsequent AHP process.

The panel agreed on five primary evaluation criteria deemed critical for determining the strategic value of any competency development initiative: (1) Relevance to Industry Needs, (2) Cost-Effectiveness, (3) Ease of Implementation, (4) Sustainability Impact, and (5) Potential for Community Participation. These criteria were selected to strike a balance between operational feasibility and long-term alignment with sustainable tourism goals. The inclusion of "Community Participation" was particularly emphasized, as guides are increasingly seen not only as service providers but also as community ambassadors and sustainability agents. Likewise, five strategic alternatives were defined and refined: S1: Experiential Learning-Based Training; S2: National Certification & Accreditation; S3: Digital/Virtual Reality (VR)-Based Learning; S4: Community-Based Apprenticeship Programs; S5: Public–Private Training Partnerships.

These alternatives were selected to capture a spectrum of intervention types—from institutional policy tools to innovative technological and community-driven models. The panelists emphasized the importance of ensuring that each strategy was conceptually implementable, even if, in practice, they may differ in complexity, scalability, or region-specific feasibility. Furthermore, consensus was reached regarding the implementation context: strategies should be particularly targeted at regions with high tourism potential but relatively low access to formal guide training—such as rural and cultural destinations. Panelists also agreed on a common baseline assumption: that all strategies would be evaluated under the premise of theoretical feasibility, allowing for a fair and balanced comparison based on strategic impact, not mere availability of resources.

The summary of these discussions is presented in Table 1, highlighting the collective judgment that formed the foundation for the AHP scoring and subsequent strategy mapping.

Table 1. Summary of Expert Panel Deliberations Prior to AHP Analysis

No	Discussion Area	Consensus Outcome	Rationale Provided by Panelists
1	Evaluation Criteria	Five key criteria agreed upon: (1) Relevance to Industry Needs, (2) Cost-Effectiveness, (3) Ease of Implementation, (4) Sustainability Impact, (5) Community Participation Potential	Criteria selected to balance practical feasibility with long-term strategic alignment and social inclusivity
2	Strategic Alternatives	Five strategies finalized: (S1) Experiential Learning, (S2) National Certification, (S3) Digital/VR Training, (S4) Community-Based Apprenticeship, (S5) Public–Private Partnerships	Alternatives drawn from both international best practices and local tourism development challenges
3	Geographic Focus	Prioritize implementation in cultural and rural tourism areas with limited access to standardized training.	These areas were seen as having high tourism potential but low existing guide capacity and limited training resources.
4	Baseline Assumptions	All strategies considered theoretically feasible; AHP would determine their relative effectiveness under current institutional conditions	Ensures fairness in pairwise comparison by assuming all strategies are implementable, with varying strategic returns

Source: Research data, 2023

This preparatory phase ensured that the subsequent AHP process was rooted in a shared understanding of the strategic landscape, reinforcing the reliability and credibility of the results. By anchoring the analysis in both empirical experience and structured consensus, the study strengthened the validity of the prioritization framework and ensured that the recommended strategies are not only technically sound but contextually grounded.

AHP Results: Criteria and Strategy Prioritization

The results from the AHP analysis revealed the relative importance of each decision criterion in determining the effectiveness of strategies for tour guide competency development. Based on the aggregated pairwise

comparisons from all expert panelists, the most critical criterion identified was Relevance to Industry Needs, which received the highest global weight of 0.310, followed by Sustainability Impact (0.245) and Community Participation Potential (0.185). Ease of Implementation and Cost-Effectiveness were ranked lower, with respective weights of 0.150 and 0.110, suggesting that while practical considerations are important, experts place greater emphasis on long-term alignment and systemic impact. These weights reflect a strategic orientation toward quality and Sustainability over short-term feasibility.

Table 2. AHP Criteria Weights

No	Decision Criterion	Weight
1	Relevance to Industry Needs	0.310
2	Sustainability Impact	0.245
3	Community Participation	0.185
4	Ease of Implementation	0.150
5	Cost-Effectiveness	0.110
Total		**1.000**

Source: Research data, 2023

The next step involved evaluating five strategic alternatives using these criteria. The experts compared each pair of strategies across all criteria, and the resulting aggregated priority scores are shown in Table 3. The strategy receiving the highest overall priority was S1: Experiential Learning-Based Training, with a global weight of 0.298, indicating strong support for hands-on, contextual learning as the most effective approach to building real-world competencies. S2 followed this: National Certification & Accreditation (0.248) and S5: Public–Private Training Partnerships (0.195), both of which were seen as essential for formalizing and scaling training efforts. Strategies involving Digital/VR Training (S3) and Community-Based Apprenticeship (S4) were ranked lower, possibly due to concerns over technological readiness and operational complexity in certain regions.

Table 3. AHP Global Priority Scores of Strategies

No	Strategic Alternative	Global Weight
S1	Experiential Learning-Based Training	0.298
S2	National Certification & Accreditation	0.248
S5	Public–Private Training Partnerships	0.195
S3	Digital/Virtual Reality Learning	0.152
S4	Community-Based Apprenticeship	0.107
Total		**1.000**

Source: Research data, 2023

The AHP results provide a clear prioritization of strategies based on structured expert judgment, with a strong emphasis on relevance, Sustainability, and community engagement. The consistency ratio (CR) values for all pairwise matrices remained below the acceptable threshold of 0.1, confirming the reliability of the expert inputs and the logical coherence of the comparisons.

TOWS Matrix Integration and Strategy Scoring

A quantitative TOWS matrix was developed to contextualize and validate the strategic priorities derived from the AHP analysis. This matrix combines the internal (Strengths and Weaknesses) and external (Opportunities and Threats) factors identified through expert discussions and literature synthesis with the weighted strategic alternatives previously obtained through AHP. Each strategy was mapped to relevant TOWS categories—SO (Strengths–Opportunities), WO (Weaknesses–Opportunities), ST (Strengths–Threats), and WT (Weaknesses–Threats)—based on its strategic relevance and applicability to specific SWOT combinations. The panel of experts was then asked to assign relevance scores on a scale of 1 to 5, indicating the strength of each strategy's contribution to addressing a particular TOWS cell. These scores were multiplied by the corresponding global weights from the AHP analysis to generate a final weighted score for each strategy in each cell. The results are presented in Table 4.

Table 4. Quantified TOWS Matrix Scoring of Strategies

Strategy	SO (× AHP Weight)	WO (× AHP Weight)	ST (× AHP Weight)	WT (× AHP Weight)	Total Score
S1 – Experiential Training	5×0.298 = 1.490	4×0.298 = 1.192	3×0.298 = 0.894	3×0.298 = 0.894	4.470
S2 – National Certification	4×0.248 = 0.992	5×0.248 = 1.240	4×0.248 = 0.992	3×0.248 = 0.744	3.968
S5 – Public–Private Partnerships	4×0.195 = 0.780	4×0.195 = 0.780	4×0.195 = 0.780	3×0.195 = 0.585	2.925
S3 – Digital/VR Learning	3×0.152 = 0.456	4×0.152 = 0.608	3×0.152 = 0.456	3×0.152 = 0.456	1.976
S4 – Community-Based Apprenticeship	3×0.107 = 0.321	3×0.107 = 0.321	2×0.107 = 0.214	2×0.107 = 0.214	1.070

Source: Research data, 2023

As shown in the Table above, experiential learning-based training (S1) emerged as the top-ranked strategy, with the highest total weighted score of 4.470, indicating its strong alignment across all quadrants of the TOWS matrix. It was considered highly relevant in leveraging existing strengths such as cultural richness and local engagement potential (SO) while also effectively addressing weaknesses such as outdated training models (WO) and adapting to potential threats like guide attrition and digital disruption (ST and WT). National certification and accreditation (S2) ranked second, with a total score of 3.968, reflecting its critical role in addressing structural weaknesses and institutional threats while also maximizing external opportunities such as policy support and tourism professionalism trends. Meanwhile, public-private partnerships (S5) received a moderate score of 2.925, with strategic value in ensuring shared investment and scalability, although perceived as less urgent than experiential or regulatory solutions. Digital/VR-based training (S3) and community-based apprenticeship programs (S4), while still relevant, received lower scores due to implementation constraints and limited perceived impact across multiple SWOT dimensions. These findings demonstrate how the TOWS matrix, informed by AHP priorities, can be used as a robust tool to formulate strategic recommendations that are context-sensitive, evidence-based, and aligned with institutional realities and sustainability goals.

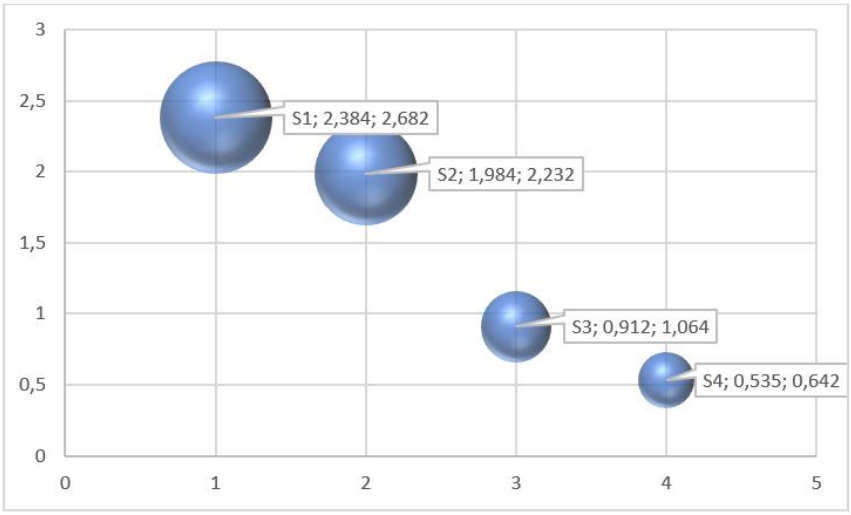


Figure 1. Strategy Mapping

Source: Research data, 2023

Figure 1 illustrates the Strategic Positioning Map based on the integration of AHP weights and quantitative TOWS analysis. The map plots each strategic alternative according to its internal strength/weakness orientation (x-axis) and external opportunity/threat alignment (y-axis), while the size of each bubble represents the total weighted score derived from the TOWS matrix. Among the alternatives, S1 – Experiential Learning-Based Training is positioned in the upper-left quadrant (high strength, high opportunity), indicating its role as a proactive SO strategy. It shows the highest values both in internal strength (2.384) and external opportunity

alignment (2.682), confirming its strategic relevance and feasibility across diverse tourism contexts. Its prominent bubble size reflects its dominant priority among the strategies considered. S2 – National Certification and Accreditation also occupies a strong position with high relevance to both strengths and opportunities (1.984; 2.232). While slightly lower than S1, its position reflects a solid institutional strategy that can enhance standardization and professional recognition in the guiding profession. Together, these two strategies form the core aggressive and transformative initiatives recommended for immediate implementation.

In contrast, S3 – Digital/VR-Based Learning and S4 – Community-Based Apprenticeship are located in the lower-right quadrant of the map, which is typically associated with weaker internal capacity and limited alignment with opportunity. S3 has a modest strength score (0.912) and opportunity score (1.064), suggesting that while it is innovative, its implementation may be constrained by technological access, especially in rural or under-resourced areas. S4, meanwhile, is situated in the lowest position (0.535; 0.642), reflecting both low internal readiness and limited immediate impact, indicating that this strategy may require substantial structural support and long-term investment before becoming effective. The map also visually emphasizes the relative strategic distance between high-priority and low-priority options, supporting a tiered recommendation framework: strategies in the top-left (SO quadrant) should be prioritized for immediate action. At the same time, those in the bottom right require further capacity building or piloting.

E. Discussion

The findings of this study reveal that the development of tour guide competencies is not merely a technical exercise but a strategic endeavor that must integrate educational, institutional, and socio-cultural dimensions. The application of the Analytical Hierarchy Process (AHP) allowed for a systematic evaluation of strategic alternatives through expert judgment. At the same time, the quantitative TOWS matrix provided a contextualized understanding of how these strategies interact with real-world internal and external factors affecting the tourism sector. The results showed a clear consensus among experts on the primacy of experiential learning-based training (S1), which achieved the highest overall weight in both the AHP ranking and the TOWS scoring. Positioned firmly in the Strength–Opportunity (SO) quadrant of the strategy map, this approach was regarded as the most effective in equipping tour guides with adaptive, field-based skills that align with the dynamic expectations of modern tourism. Its implementation not only strengthens internal capacities but also leverages existing opportunities, such as cultural tourism growth and the shift toward meaningful travel experiences.

Following closely behind, national certification and accreditation systems (S2) were recognized for their institutional value and ability to address existing weaknesses in standardization and professional recognition. This strategy aligns well with both internal weaknesses and external opportunities (WO quadrant), offering a structured mechanism to formalize guide competencies, build public trust, and raise service quality. Although more policy-dependent in nature, its scalability and long-term benefits make it a foundational element in professionalizing the guiding sector. Public-private training partnerships (S5) were moderately prioritized and recognized for their potential to distribute responsibility and cost across stakeholders. Their position in the ST quadrant indicates a response to external threats such as informal guiding practices and industry fragmentation, utilizing institutional strengths like regulatory frameworks and training infrastructure. While not as immediate in implementation, this strategy plays a key supporting role in ecosystem strengthening.

In contrast, strategies such as digital and VR-based learning (S3) and community-based apprenticeship programs (S4) were positioned in the lower quadrants (WT), suggesting limited short-term effectiveness without significant capacity building. Their lower scores may be attributed to infrastructure disparities, technological access gaps, and the need for more structured support systems. Nonetheless, their future potential should not be discounted, especially as supporting technologies and community-based tourism continue to evolve. The strategic positioning map further clarified the interrelationship between strategy

orientation and institutional readiness. Strategies falling into the SO and WO quadrants represent aggressive and developmental approaches that can be activated with current capacities, while those in ST and WT reflect defensive or long-term diversification strategies that require further investment.

Strategic Formulation

Based on the integration of AHP and TOWS analysis, the following three-tiered strategic formulation is recommended in Table 5.

Table 5. Strategic Formulation for Tour Guide Competency Development (AHP–TOWS Integrated)

Strategy Tier	Strategy Code & Title	Strategic Description	Implementation Focus
Primary Strategies (Immediate Priority)	S1 – Experiential Learning-Based Training	Structured hands-on training modules in real tourism settings to develop practical skills such as communication, storytelling, and crisis handling.	Rapid implementation in high-traffic destinations
	S2 – National Certification & Accreditation	Strengthen national frameworks to certify guides based on clear standards, improving credibility and service consistency across regions.	Policy-level rollout and institutional coordination
Supporting Strategies (Mid-Term Implementation)	S5 – Public–Private Training Partnerships	Facilitate co-development of training programs between government, private operators, and training institutions to pool resources and expertise.	Cross-sector coordination and funding mechanisms
Developmental Strategies (Long-Term Potential)	S3 – Digital & VR-Based Learning	Develop e-learning and virtual simulation platforms to extend training access, particularly to remote areas with limited physical training infrastructure.	Technology investment and pilot testing
	S4 – Community-Based Apprenticeship	Pilot informal mentorship-based models where experienced guides train new entrants, promoting local knowledge and grassroots capacity building.	Community engagement and small-scale pilots

Source: Research data, 2023

F. CONCLUSION

This study set out to identify and prioritize effective strategies for enhancing tour guide competencies in alignment with the evolving demands of the tourism industry. By integrating the Analytical Hierarchy Process (AHP) with a quantitative TOWS matrix, the research successfully combined expert-driven evaluations with contextual SWOT-based strategic formulation, resulting in a comprehensive, evidence-based roadmap. The findings indicate that experiential learning-based training and national certification and accreditation systems are the most immediate priorities, offering high impact and feasibility in professionalizing the guiding sector. Supporting strategies such as public-private training partnerships provide valuable reinforcement through collaborative resource mobilization, while developmental strategies like digital/VR-based learning and community-based apprenticeship hold long-term potential, especially for reaching underserved areas and promoting grassroots engagement.

The AHP–TOWS integration has proven to be a robust framework for strategic planning in human resource development within tourism. It enables prioritization based not only on technical merit but also on the strategic fit with real-world strengths, weaknesses, opportunities, and threats. As a result, the proposed strategies are both theoretically grounded and practically applicable, offering policymakers, training institutions, and tourism stakeholders a clear direction for action. Future research may expand on this work by testing the strategies in pilot regions, measuring their effectiveness through longitudinal studies, or exploring the integration of behavioral and digital competencies in more detail. Nevertheless, this study affirms that the development of tour guide competencies must be approached strategically, collaboratively, and adaptively in order to ensure quality, sustainability, and competitiveness in the global tourism landscape.

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