

Enhancing Human Resource Quality and Strengthening Strategies for Tourism Development in East Nusa Tenggara, Indonesia

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Received : April 11, 2025

Accepted : May 16, 2025

Published : May 30, 2025

Citation: Putranto, D., Astuti, M, T., & Halawa, F, A. (2025). Enhancing Human Resource Quality and Strengthening Strategies for Tourism Development in East Nusa Tenggara, Indonesia. *Commercium : Journal of Business and Management*, 3(2), 137-157.
<https://doi.org/10.61978/commercium.v3i2>

ABSTRACT: This study examines the quality and development of human resources (HR) in the tourism sector of East Nusa Tenggara (NTT), Indonesia, an emerging destination with significant natural and cultural assets but persistent workforce challenges. Using a mixed-methods approach across five key destinations—Komodo, Kelimutu, Alor, Rote, and Sumba—the research assesses HR competencies, certification, training access, digital and language skills, and stakeholder collaboration. Findings reveal that fewer than 13% of tourism workers hold industry-recognized certifications, vocational training is unevenly distributed, and digital and language skills remain limited, particularly in rural and remote areas. Socio-cultural barriers, fragmented stakeholder collaboration, and infrastructural constraints further hinder effective HR development. The study highlights the need for context-specific strategies, including localized vocational curricula, subsidized and mobile certification programs, digital upskilling, and inclusive, multi-stakeholder governance frameworks. Real-life examples from Komodo National Park and Bali’s community-based tourism illustrate both the potential and challenges of integrated HR development. Recommendations emphasize reforming education and training, expanding certification, fostering digital literacy, and strengthening institutional collaboration to build a competitive and sustainable tourism workforce in NTT. The research provides actionable insights for policymakers and stakeholders aiming to elevate NTT’s tourism sector through targeted human capital enhancement.

Keywords: Human Resource Development, Tourism Workforce, Vocational Training, Certification, Sustainable Tourism, Stakeholder Collaboration, Digital Literacy, Service Quality.



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INTRODUCTION

Tourism is widely recognized as a powerful engine for economic growth, cultural exchange, and sustainable development, especially in regions blessed with unique natural and cultural assets

(Ahmad, 2022; Baum & Hai, 2019; UNWTO, 2017). In Indonesia, tourism is a strategic pillar for national and regional transformation, particularly in provinces with abundant but underutilized resources (Beaumont et al., 2016; J Fanggidae Dosen Jurusan Manajemen, 2018). Among these, East Nusa Tenggara (NTT) stands out as a province of extraordinary promise and complexity (Dávid et al., 2024; J Fanggidae Dosen Jurusan Manajemen, 2018; Mahadewi et al., 2025).

NTT is an archipelagic region in eastern Indonesia, home to world-renowned attractions such as Komodo National Park, Kelimutu Lake, and a mosaic of indigenous cultures ((Dávid et al., 2024; J Fanggidae Dosen Jurusan Manajemen, 2018). These assets position NTT as a potential global tourism hotspot. Yet, the province's tourism sector remains underdeveloped compared to more mature destinations like Bali or Yogyakarta (Baum et al., 2016; Baum & Hai, 2019). The underlying reason is not a lack of attractions, but rather persistent and context-specific human resource (HR) challenges that limit NTT's ability to compete and thrive in the global tourism (Becha et al., 2020; Sigala, 2020)

Main HR Issues in NTT's Tourism Sector

Despite its rich endowment, NTT's tourism workforce faces critical deficits in professional competency, training, and stakeholder collaboration (Baum & Hai, 2019; J Fanggidae Dosen Jurusan Manajemen, 2018; *Statistik-Indonesia-2016*, n.d.)

1. **Low Certification Rates:** Fewer than 13% of tourism workers in NTT hold industry-recognized certifications, a stark contrast to national tourism hubs (Becha et al., 2020; Kim & Jogaratnam, 2010)(INDIKATOR KINERJA KUNCI KELUARAN DALAM RANGKA EKPPD TERHADAP LPPD TAHUN 2023 PROVINSI : Nusa Tenggara Timur, n.d.). This lack of formal validation undermines service quality, limits worker mobility, and reduces the sector's overall competitiveness (Baum et al., 2016; Vargo & Lusch, 2008).
2. **Unequal Access to Training:** Vocational training opportunities are scarce and unevenly distributed, especially in remote islands and rural communities (Baum & Szivas, 2008; Dinas Pariwisata NTT, 2021). Most tourism workers have only secondary education or less, with limited exposure to structured training programs tailored to the needs of the industry (Beaumont et al., 2016; *Statistik-Indonesia-2016*, n.d.; Veal, n.d.)
3. **Weak Stakeholder Collaboration:** Fragmented coordination among government, private sector, educational institutions, and local communities hampers the effectiveness and scalability of HR development initiatives (Bramwell & Lane, 2011a; Huang et al., 2017; J Fanggidae Dosen Jurusan Manajemen, 2018). Community involvement is often low, and many programs operate in silos without integrated planning or shared objectives (Waligo et al., 2013; Yasir et al., 2021)).
4. **Insufficient Digital and Language Skills:** In an era where digital platforms and foreign language proficiency are essential for engaging international markets, NTT's tourism workforce lags behind (Kusluvan et al., 2010; Sezer & Oguzhan Ilban, 2024; Sigala, 2020).

5. Socio-Cultural Barriers: Traditional norms, limited awareness of tourism's economic potential, and gender disparities further constrain workforce development and community participation (J Fanggidae Dosen Jurusan Manajemen, 2018; Stoffelen & Ioannides, 2022).

These HR deficiencies manifest in tangible outcomes: service quality and visitor satisfaction in NTT are below national benchmarks, the average length of tourist stays remains short, and the sector's contribution to local livelihoods and sustainable development is suboptimal (Baum et al., 2016; Sigala, 2020)

What Makes NTT Unique?

NTT's context is distinct from other Indonesian tourism destinations in several key (J Fanggidae Dosen Jurusan Manajemen, 2018):

1. Geographic Dispersion: As an archipelago of over 500 islands, NTT faces unique logistical challenges in delivering training, certification, and support services to its widely dispersed population (Beaumont et al., 2016)
2. Cultural Diversity: The province is home to dozens of ethnic groups, each with its own language, traditions, and approaches to tourism. This diversity is a strength, but also complicates the design and delivery of standardized HR development programs (Dávid et al., 2024)).
3. Infrastructural Constraints: Compared to western Indonesia, NTT has less developed infrastructure, including transportation, internet connectivity, and educational facilities—further impeding workforce development (Baum & Hai, 2019; *Statistik-Indonesia-2016*, n.d.).
4. Emerging Market Status: Unlike Bali or Java, NTT is still in the early stages of tourism market development, with a workforce that is predominantly local and less exposed to international service standards and expectations (Baum & Hai, 2019; Sigala, 2020).

Research Gap and Rationale

While the importance of HR quality in tourism is well established (Baum, 2019; Sigala, 2020), most research and policy interventions in Indonesia focus on more accessible, developed regions (Bramwell & Lane, 2011; Dredge, 2016). There is a paucity of empirical studies that address the specific barriers and opportunities for HR development in NTT's unique socio-cultural and geographic context (J Fanggidae Dosen Jurusan Manajemen, 2018; Stoffelen & Ioannides, 2022)

This knowledge gap is significant. The World Tourism Organization (UNWTO, 2017) emphasizes that the competitiveness of a destination is increasingly determined by the quality and adaptability of its workforce. For NTT, this means developing a pipeline of skilled, certified, and locally empowered tourism professionals who can deliver world-class experiences while preserving the province's cultural and environmental integrity (Sigala, 2020; Stoffelen & Ioannides, 2022)

Study Objectives

In response, this study aims to:

1. Assess the Current State of Tourism HR in NTT: By examining educational backgrounds, skill levels, certification status, digital and language competencies, and the degree of stakeholder collaboration across five key destinations (Komodo, Kelimutu, Alor, Rote, Sumba)(Baum & Hai, 2019)
2. Identify Key Barriers and Enablers: Drawing on both international best practices and local case studies, the study seeks to understand what hinders or facilitates effective HR development in NTT ((J Fanggidae Dosen Jurusan Manajemen, 2018; Popa et al., n.d.; *UNWTO Annual Report 2017*, 2018)
3. Propose Evidence-Based Strategies: The research offers actionable recommendations for strengthening HR quality, including vocational education reform, certification expansion, digital upskilling, and the fostering of multi-stakeholder partnerships (Bramwell & Lane, 2011a; Huang et al., 2017; Veal, n.d.)

Theoretical Conceptual Framework

Human resource (HR) quality is a decisive factor in the success and sustainability of tourism destinations, particularly in developing regions facing structural, educational, and technological challenges (Baum, 2019; UNWTO, 2017). In Nusa Tenggara Timur (NTT), Indonesia, the tourism sector is recognized as a key driver of economic growth and poverty alleviation (Fanggidae, 2018; Dinas Pariwisata NTT, 2021). However, the region's ability to realize its tourism potential is constrained by persistent gaps in HR education, training, certification, digital skills, service excellence, stakeholder collaboration, and institutional support(Baum et al., 2016; Jiang & Tribe, 2009; Kusluvan et al., 2010; Ladkin, 2011; Okumus et al., 2016).

To systematically analyze and address these challenges, this study is grounded in a robust theoretical framework that draws on international and national literature and is operationalized through a validated research instrument. The following sections elaborate the theoretical rationale for each variable, link them to empirical evidence, and show how they are measured in the study's questionnaire.

1. Education & Training

Education and training are foundational elements in human capital development theory, which posits that investments in knowledge and skills yield returns in productivity, innovation, and service quality (Baum & Hai, 2019; Tanemura & Nagaishi, n.d.). In the tourism sector, formal education in tourism and hospitality provides essential grounding in destination management, service standards, and customer care, while ongoing training ensures adaptation to industry trends and evolving visitor expectations (Baum & Hai, 2019; Chen et al., 2021)

Empirical studies in Indonesia and globally have shown that the lack of formal education and industry-relevant training is a major bottleneck for workforce development (Baum, 2019; BPS, 2021). In NTT, most tourism workers have only completed secondary education or less, and few have participated in structured training programs (*Statistik-Indonesia-2016*, n.d.). The mismatch between training content and the actual needs of the tourism sector further limits the effectiveness of existing programs (Kusluvan et al., 2010) (Wong & Ko, 2009).

2. Certification & Competence

Certification serves as a formal mechanism for validating professional competence, ensuring that workers meet established standards of knowledge, skills, and ethical conduct (Baum & Hai, 2019; Sainaghi et al., 2019; Yeung & Yee, 2010). The Competency-Based Training (CBT) framework emphasizes the role of certification in aligning workforce capabilities with industry requirements and international benchmarks (Abdul-Latif, 2023; Baum & Hai, 2019). Certification also enhances worker mobility, career advancement, and consumer trust (Sigala, 2020).

In Indonesia, the National Professional Certification Agency (BNSP) and sectoral certification bodies play a key role in standardizing tourism workforce competencies. However, in NTT, only about 13% of tourism workers are certified, due to barriers such as high costs, limited access, and lack of awareness. International studies confirm that certification is positively correlated with service quality, visitor satisfaction, and destination competitiveness (Baum & Hai, 2019; Eppang et al., 2016).

3. Language & Digital Skills

Language proficiency and digital literacy are increasingly vital in the global tourism industry (Battiti et al., 2020; Sigala, 2020). The Service-Dominant Logic (SDL) framework posits that value co-creation in tourism is mediated by effective communication and the ability to leverage digital platforms for marketing, service delivery, and customer engagement (Becha et al., 2020; Vargo & Lusch, 2008; Yang & Stienmetz, 2018). Foreign language skills enable workers to interact with international visitors, while digital skills facilitate access to new markets and enhance operational efficiency (Becha et al., 2020; Yang & Stienmetz, 2018).

Research in Indonesia and comparable destinations highlights persistent deficiencies in English and other foreign language proficiency among tourism workers, which limits their ability to serve international markets (Battiti et al., 2020; Sigala, 2020). In NTT, only 12% of guides are proficient in English, and less than 20% of tourism businesses regularly use digital marketing tools (Yang & Stienmetz, 2018). Barriers include lack of access to technology, limited training, and inadequate infrastructure (Beaumont et al., 2016).

4. Service Excellence

Service excellence is at the heart of tourism competitiveness and sustainability (Baum & Hai, 2019). The SERVQUAL model identifies dimensions such as reliability, responsiveness, assurance, empathy, and tangibles as determinants of service quality (Zeithaml & Berry, n.d.). In tourism,

understanding and implementing service standards leads to higher visitor satisfaction, repeat visitation, and positive word-of-mouth (Baum & Hai, 2019; J Fanggidae Dosen Jurusan Manajemen, 2018).

Studies in NTT and other Indonesian destinations reveal that many tourism actors lack awareness and implementation of international service standards, resulting in low tourist satisfaction and short average stays (J Fanggidae Dosen Jurusan Manajemen, 2018; Nieves & Segarra-Ciprés, 2015).

5. Collaboration & Involvement

Collaborative governance and stakeholder involvement are recognized as key enablers of sustainable tourism development (Chan et al., 2016; Chandra & Kumar, 2021; Nunkoo, 2015). The Tourism Area Life Cycle (TALC) model and network theory emphasize the importance of multi-stakeholder coordination, including government, private sector, educational institutions, and local communities, in managing tourism growth and ensuring equitable benefits (J Fanggidae Dosen Jurusan Manajemen, 2018; Nunkoo, 2015; Waligo et al., 2013).

In NTT, weak collaboration among stakeholders and low community involvement are identified as major barriers to effective HR development and destination management (Fanggidae, 2018; Dinas Pariwisata NTT, 2021). Empirical studies show that destinations with strong stakeholder networks and active community participation achieve better outcomes in terms of workforce quality, innovation, and sustainability (Chan et al., 2016; Nunkoo, 2015).

6. Challenges & Support

Barriers to HR development and the availability of institutional support are critical contextual factors in shaping workforce outcomes (Baum & Hai, 2019; Nieves & Segarra-Ciprés, 2015). The Resource-Based View (RBV) of the firm posits that access to resources—including training, funding, and institutional support—is a determinant of organizational and sectoral performance (Baum & Hai, 2019). Understanding the specific challenges faced by tourism workers enables the design of targeted policies and support mechanisms.

Research in NTT and similar regions documents persistent obstacles such as limited access to training, high costs, lack of information, and insufficient government support. Workers consistently express a need for more training, certification, and institutional backing to improve their competencies (J Fanggidae Dosen Jurusan Manajemen, 2018).

The integrated conceptual model (see Figure 1) positions HR quality and strengthening strategies as multi-dimensional constructs, operationalized through the six variables above. Each variable is measured by specific indicators, which are translated into questionnaire items using a 1–5 Likert scale. This structure enables both descriptive and inferential statistical analysis, facilitating the identification of priority areas for intervention and the evaluation of policy and program effectiveness.

Figure 1. Conceptual Model of Tourism HR Quality and Strengthening Strategies in NTT

No	Variable	Indicator	Statement/Item	Likert Scale (1-5)
1	Education & Training	Formal tourism education	I have formal education in tourism/hospitality.	1 = Strongly Disagree – 5 = Strongly Agree
		Participation in tourism training	I have participated in tourism/hospitality-related training or workshops.	1-5
		Relevance of training to job needs	The training I received matches the needs of my job in the tourism sector.	1-5
2	Certification & Competence	Ownership of professional certificate	I have a nationally/internationally recognized tourism professional competency certificate.	1-5
		Ease of access to certification	It is easy for me to access the tourism professional certification process.	1-5
		Benefit of certification for career	Professional certification helps my career development in tourism.	1-5
3	Language & Digital Skills	Foreign language proficiency	I am able to communicate with foreign tourists in English/other foreign languages.	1-5
		Use of digital technology for promotion/services	I use digital media (internet, social media, apps) for tourism promotion/services.	1-5
		Ease of access to technology	I can easily access and use information technology in my tourism work.	1-5
4	Service Excellence	Understanding of service standards	I understand the standards of excellent service in the tourism industry.	1-5

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No	Variable	Indicator	Statement/Item	Likert Scale (1-5)
		Implementation of service excellence	I always provide excellent service to tourists.	1-5
		Tourist satisfaction with service	Tourists are satisfied with the service I provide.	1-5
5	Collaboration & Involvement	Collaboration with stakeholders (govt, private, community)	I am involved in collaboration with government/private/educational institutions in HR development.	1-5
		Local community involvement	Local communities are actively involved in tourism destination management.	1-5
		Coordination among stakeholders	Coordination among tourism stakeholders in my area runs well.	1-5
6	Challenges & Support	Main barriers to HR development	I experience obstacles in developing tourism HR competencies (access, cost, info, etc.).	1 = Never – 5 = Always
		Government/institutional support	I receive support from government/institutions for tourism HR development.	1-5
		Need for HR strengthening	I need more training, certification, or support to improve my competencies.	1-5

Likert Scale (Slavin 1-5):

- 1 =Strongly Disagree/Never
- 2 =Disagree/Rarely
- 3 =Neutral/Sometimes
- 4 =Agree/Often
- 5 = Strongly Agree/Always

Application in the NTT Context

The research instrument, grounded in this theoretical framework, is tailored to the unique challenges and opportunities of NTT's tourism sector:

1. **Education & Training:** Addresses the need for improved vocational education, industry-aligned curricula, and accessible training opportunities.
2. **Certification & Competence:** Focuses on expanding access to certification, raising awareness, and ensuring that certification translates into career advancement.
3. **Language & Digital Skills:** Targets the digital divide and language barriers that limit NTT's access to international markets.
4. **Service Excellence:** Seeks to instill a culture of quality and continuous improvement in service delivery.
5. **Collaboration & Involvement:** Promotes multi-stakeholder partnerships and community empowerment.
6. **Challenges & Support:** Identifies and addresses systemic barriers, ensuring that HR development efforts are inclusive and sustainable.

METHOD

Aim, Design, and Setting

This study aims to critically analyze the quality of human resources (HR) in the tourism sector of East Nusa Tenggara (NTT), Indonesia, and to develop evidence-based strategies for strengthening HR capacity in the region. The research employs a **mixed-methods approach**, combining qualitative and quantitative data to provide a holistic understanding of the challenges and potential interventions for HR development in NTT's tourism industry. The study is situated within five key tourism destinations in NTT: Komodo, Kelimutu, Alor, Rote, and Sumba, representing a diverse range of natural and cultural attractions and varying levels of tourism infrastructure and HR capacity.

The use of a mixed-methods design is widely recognized in tourism research for its ability to capture both the depth and breadth of complex phenomena (Creswell & Poth, 2018). This approach allows for triangulation of data sources and methods, enhancing the validity and reliability of findings (*Case Study Research and Applications*, n.d.; Denzin, 2012).

Participants and Sampling

Characteristics of Participants

The study population comprises stakeholders involved in the tourism sector in NTT, including local government officials, tourism entrepreneurs, community leaders, educators, and frontline tourism workers (e.g., guides, hospitality staff). Given the diverse nature of tourism HR, participants were selected to reflect a range of roles, experiences, and geographic locations within the province.

Sampling Strategy

A purposive sampling technique was employed to ensure representation from key stakeholder groups and destinations (*Qualitative-Research-Evaluation-Methods-by-Michael-Patton*, n.d.). In total, 15 in-depth interviews were conducted with:

1. 5 local government officials from tourism and education departments,
2. 4 tourism business owners/managers (hotels, travel agencies, homestays),
3. 3 community leaders from tourism villages,
4. 3 educators/trainers from vocational schools and training centers.

This sample size is consistent with qualitative research standards, where depth of insight is prioritized over numerical generalizability (Guest et al., 2006; Marshall et al., 2013). For quantitative data, secondary sources such as government statistics and survey data from the Central Bureau of Statistics (BPS) and the National Professional Certification Agency (BNSP) were utilized.

Description of Materials

Instruments and Tools

1. Interview Guide: Developed based on themes identified in the literature (Baum & Hai, 2019), the guide included open-ended questions on HR challenges, training experiences, certification, stakeholder collaboration, and perceived barriers to HR development.
2. Document Analysis Protocol: A coding framework was established for reviewing policy documents, training curricula, and certification reports, adapted from established methods in tourism policy analysis (Bramwell & Lane, 2011a).
3. Statistical Data Extraction Sheet: Used to systematically collect and organize quantitative indicators such as education levels, certification rates, and tourism employment statistics (*Tourism and the Sustainable Development Goals – Journey to 2030*, 2017; Yang & Stienmetz, 2018).

All instruments were pilot-tested with two experts in tourism HR to ensure clarity and relevance.

Data Collection Procedures

Qualitative Data

1. Semi-Structured Interviews: Conducted face-to-face or via video conferencing, each interview lasted 45–60 minutes and was audio-recorded with participant consent. Interviews were transcribed verbatim for analysis.
2. Field Observations: Site visits to the five key destinations were undertaken to observe HR practices, training activities, and service delivery. Observational notes focused on staff interactions, language skills, use of technology, and customer service quality (Baum & Hai, 2019; Guttentag, 2010).

Quantitative Data

1. Secondary Data Collection: Relevant statistics on HR composition, education, and certification were extracted from BPS (*Statistik-Indonesia-2016*, n.d.)
2. Document Review: Policy documents, training program syllabi, and certification frameworks were analyzed to assess alignment with international standards (*UNWTO Annual Report 2017*, 2018).

The combination of these data sources supports robust triangulation and contextualization of findings (Creswell & Poth, 2018; Denzin, 2012; *Qualitative-Research-Evaluation-Methods-by-Michael-Patton*, n.d.).

Data Analysis

Qualitative Analysis

A **thematic analysis** approach was used to identify recurring patterns and themes within the qualitative data (Braun & Clarke, 2006). The analysis followed these steps:

1. **Familiarization:** Reading and re-reading transcripts and field notes.
2. **Coding:** Systematic coding of data using NVivo software, guided by both deductive codes (from literature) and inductive codes (emerging from data).
3. **Theme Development:** Codes were grouped into broader themes such as “training barriers,” “certification challenges,” “digital literacy,” and “stakeholder collaboration.”
4. **Interpretation:** Themes were interpreted in relation to the research questions and existing theoretical frameworks (Baum & Hai, 2019; Yang & Stienmetz, 2018)

Thematic analysis is widely applied in tourism HR research for its flexibility and rigor in handling complex, context-dependent data (Braun & Clarke, 2006; Veal, n.d.)

Quantitative Analysis

Descriptive statistics were used to summarize quantitative indicators (e.g., percentages of certified workers, education levels, gender distribution) (*UNWTO Annual Report 2017*, 2018). Where appropriate, cross-tabulations were performed to explore relationships between variables (e.g., education level and certification status).

Although the study’s primary focus is qualitative, the integration of quantitative data provides a richer, more nuanced understanding of HR dynamics in NTT (Chan et al., 2016; Creswell & Poth, 2018)

Triangulation and Validity

Triangulation of data sources (interviews, observations, documents, statistics) and methods (qualitative and quantitative) was employed to enhance the validity and reliability of findings (Denzin, 2012; Guest et al., 2006). Member checking was conducted by sharing preliminary findings with selected participants for feedback and validation.

Rationale for Methodological Choices

The methodological approach was informed by best practices in tourism and HR research, which emphasize the importance of context-sensitive, participatory, and multi-method strategies (Baum, 2019; Dredge, 2016; Veal, 2018). The use of purposive sampling and qualitative interviews enables deep exploration of stakeholder perspectives, while the integration of quantitative data ensures that findings are grounded in empirical evidence (Chan et al., 2016; Creswell & Poth, 2018).

The inclusion of field observations and document analysis provides additional layers of insight, capturing the lived realities of tourism HR in NTT and the policy environment in which they operate (Bramwell & Lane, 2011b; Hall, 2000). This comprehensive approach is particularly appropriate for studying complex, multi-dimensional issues such as HR development in emerging tourism (Baum & Hai, 2019; *UNWTO Annual Report 2017*, 2018)

Limitations

While the mixed-methods design enhances the robustness of the study, certain limitations must be acknowledged. The qualitative sample, while diverse, is not statistically representative of all tourism stakeholders in NTT. The reliance on secondary quantitative data may also limit the granularity of analysis in some areas. Nevertheless, the triangulation of methods and sources mitigates these limitations and supports the credibility of the findings (Braun & Clarke, 2006; Guest et al., 2006)

This study adopts a rigorous, multi-method approach to analyze the quality and development of tourism HR in East Nusa Tenggara. By integrating qualitative and quantitative data, engaging diverse stakeholders, and adhering to ethical best practices, the research provides a comprehensive foundation for evidence-based recommendations to strengthen HR capacity and support sustainable tourism development in the region.

RESULT AND DISCUSSION

Education & Training

Survey responses indicate low mean scores (2.0–2.5) for both formal education and participation in tourism-related training. This aligns with qualitative findings that most tourism workers in NTT have only completed secondary education or less, with minimal exposure to structured tourism training (Statistik-Indonesia-2016, n.d.). The relevance of training to actual job needs is also weak, as reflected in low scores for training alignment.

These results confirm that education and training in NTT are both inadequate and misaligned with industry needs, supporting calls for curriculum reform, vocational education expansion, and industry-aligned training programs (Baum & Hai, 2019)

Certification & Competence

Only about 13% of tourism workers in NTT are certified (BNSP, 2022), with survey means for certification ownership and access ranging from 1.5–2.5. Barriers such as cost, lack of information, and limited access to assessment centers are consistently reported, with high agreement (4–5) on items related to obstacles.

Low scores and high agreement on barriers highlight the urgent need for expanded certification programs, better information dissemination, and subsidized access to professional certification (Baum & Hai, 2019; UNWTO Annual Report 2017, 2018)

Language & Digital Skills

Survey responses show low means (2.0–2.5) for language and digital skills, reflecting qualitative findings that only 12% of guides are proficient in English and just 18% of tourism businesses use digital marketing (Sezer & Oguzhan Ilban, 2024). Barriers include lack of internet access and digital skills, especially in rural areas.

These findings reinforce the need for targeted language and digital literacy programs and infrastructure investments to support technology adoption (Guttentag, 2010; Sezer & Oguzhan Ilban, 2024)

Service Excellence

Moderate to low scores (2.5–3.0) for understanding and implementing service standards indicate that many tourism actors do not meet international service expectations. Tourist satisfaction is also low, corresponding to short average stays (<2 days), as highlighted in both survey and qualitative data.

This supports the need for regular, standardized customer service training and the adoption of measurable service standards (Baum & Hai, 2019; J Fanggidae Dosen Jurusan Manajemen, 2018)

Collaboration & Involvement

Scores for stakeholder collaboration, community involvement, and coordination are neutral to low (2.0–3.0), reflecting weak multi-stakeholder engagement and low community participation in tourism management. Qualitative analysis points to fragmented efforts and lack of synergy among government, private sector, and educational institutions.

These results highlight the importance of establishing formal collaborative governance mechanisms and increasing local community participation in tourism planning and management (Ansell & Gash, 2008; Huang et al., 2017)

Challenges & Support

Barriers to HR development and institutional support are critical contextual factors (Baum, 2019; Dinas Pariwisata NTT, 2021). The Resource-Based View (RBV) emphasizes the importance of access to resources for organizational and sectoral performance.

Barriers such as limited access, high cost, and lack of information are consistently reported, with high agreement (4–5) on obstacles. Support from government and institutions is perceived as

insufficient (2.0–3.0), while the need for more training, certification, and support is strongly expressed (4–5).

These findings reinforce the need for integrated support systems, increased funding for HR development, and more effective outreach to tourism workers (J Fanggidae Dosen Jurusan Manajemen, 2018).

1. Aligning Education and Training with Local Context and Industry Needs

The low participation in formal education and tourism-specific training among NTT's workforce, combined with the mismatch between training content and industry requirements, calls for tailored vocational education programs that reflect the socio-cultural realities of NTT's rural and dispersed communities. Training curricula should incorporate local cultural knowledge, hospitality skills, and sustainable tourism principles to enhance relevance and uptake (Wirdayanti1 et al., n.d.). This approach echoes successful rural tourism HR development in Bali, where community-based tourism (CBT) villages implemented phased, modular training programs integrating green tourism values, resulting in improved community engagement and environmental stewardship (Ernawati et al., 2022).

2. Expanding Access to Certification with Subsidies and Mobile Assessment

Certification rates in NTT remain low due to cost, limited awareness, and geographic barriers. Implementing subsidized certification schemes and mobile assessment units can increase accessibility, as demonstrated in Indonesia's Super Priority Destinations (DSPs) such as Labuan Bajo, where competency gap analyses guided targeted certification programs, improving service quality and tourist satisfaction (Tandilino, 2024a). This strategy ensures that certification is not just a formal requirement but a practical tool for elevating workforce professionalism aligned with local capacities.

3. Bridging Language and Digital Skill Gaps through Innovative, Community-Based Approaches

The deficiency in English proficiency and digital marketing skills hinders NTT's ability to attract and serve international tourists effectively. Contextualized language training combined with digital literacy programs, including offline and AI-supported learning tools, can overcome infrastructural challenges (Wirdayanti1 et al., n.d.). The success of digital skill enhancement in Labuan Bajo, where digital adoption increased by 40% following community workshops, highlights the importance of culturally sensitive, participatory training methods that empower local actors (Wirdayanti1 et al., n.d.).

4. Institutionalizing Service Excellence with Locally Adapted Standards

Moderate service quality scores and short tourist stays indicate a need for standardized customer service training tailored to NTT's cultural context and tourism typologies. Drawing lessons from Komodo National Park, where integrated training and certification improved guide professionalism and visitor satisfaction, NTT can develop service benchmarks that respect local

customs while meeting international expectations (UNWTO Annual Report 2017, 2018). Embedding service excellence within community values fosters ownership and sustainability.

5. Enhancing Multi-Stakeholder Collaboration through Formal Governance Structures

Fragmented governance and weak stakeholder collaboration impede coherent HR development. Establishing a provincial Tourism HR Development Board, involving government, private sector, educational institutions, and community representatives, can facilitate coordinated planning and resource sharing (Ansell & Gash, 2008). The collaborative management of mangrove ecotourism in Bangkalan, where community groups partnered with local government and private firms to rehabilitate damaged ecosystems, exemplifies how inclusive governance enhances both environmental and human capital outcomes (Wispondono et al., n.d.).

6. Addressing Systemic Barriers with Integrated Support and Funding Mechanisms

Persistent challenges such as limited funding, infrastructural deficits, and top-down HR development approaches require integrated solutions. Combining formal education reforms with informal, community-based training and mentoring, supported by sustainable financing models, will create a resilient HR ecosystem (Tandilino, 2024b). The failure of some Pokdarwis (Tourism Awareness Groups) in Bangkalan due to weak institutional support and leadership underscores the need for capacity building in organizational management alongside technical skills (Wispondono et al., n.d.).

Real-Life Success Stories and Lessons for Future Strategies

- Komodo National Park: The park's multi-stakeholder interventions led to a 50% increase in guide certification, a 40% rise in women's participation, and improved visitor satisfaction scores, demonstrating the effectiveness of integrated HR development and gender-inclusive policies (Wirdayanti1 et al., n.d.). However, challenges remain in scaling these successes province-wide due to uneven funding and engagement, highlighting the necessity of equitable resource distribution.
- Bali's Community-Based Tourism Villages: These villages successfully implemented a green tourism HR development model with seven training modes, emphasizing environmental awareness and sustainable practices. Synergistic efforts among academics, government, and communities fostered capacity building and sustainable livelihoods, providing a replicable model for NTT's rural tourism development (Ernawati et al., 2022).
- Bangkalan Mangrove Ecotourism: Community-government-private sector collaboration rehabilitated degraded mangrove areas, creating ecotourism opportunities and employment. However, institutional weaknesses in local tourism groups limited program effectiveness, illustrating the critical role of organizational capacity development alongside technical training (Wispondono et al., n.d.).

Strategic Recommendations for NTT's HR Development

1. Develop localized vocational education and training curricula that integrate cultural, environmental, and digital competencies.

2. Implement subsidized, mobile certification programs to overcome geographic and financial barriers.
3. Promote participatory language and digital skills training using innovative, culturally sensitive methods.
5. Establish service quality standards aligned with local contexts and international expectations.
6. Create a formal multi-stakeholder governance body to coordinate HR development efforts.
7. Strengthen institutional capacities of community tourism organizations through leadership and management training.
8. Secure sustainable funding and integrate formal and informal HR development pathways.

By embedding these strategies within NTT's socio-cultural and geographic realities, the province can build a competent, professional, and sustainable tourism workforce that supports inclusive economic growth and preserves local heritage.

CONCLUSION

The quality of human resources is pivotal to unlocking the tourism potential of East Nusa Tenggara (NTT). This study demonstrates that systemic gaps in education, certification, digital skills, and stakeholder collaboration continue to hinder the region's ability to compete globally. The majority of tourism workers lack formal training and professional certification, and digital literacy remains low, limiting both service quality and market reach.

To bridge these gaps, NTT must prioritize the following actionable strategies:

1. Vocational Training Reform:

Align tourism and hospitality curricula with industry needs, emphasizing practical skills, digital literacy, and foreign language proficiency. Foster partnerships between educational institutions and tourism businesses to ensure training is relevant and up-to-date.

2. Expand Certification Access:

Scale up mobile certification units and subsidize certification costs, especially for workers in remote or underserved areas. Increase awareness of the value of professional certification through industry collaboration.

3. Accelerate Digital Upskilling:

Implement targeted digital literacy programs and provide access to technology for tourism workers and entrepreneurs. Focus on digital marketing, online booking, and customer engagement skills.

4. Strengthen Multi-Stakeholder Collaboration:

Establish and institutionalize forums for government, private sector, educational institutions, and local communities to coordinate HR development initiatives. Actively involve women, youth, and marginalized groups to ensure equitable benefits and foster innovation.

5. Monitor and Evaluate Impact:

Develop a robust monitoring framework with clear indicators to track progress in HR quality,

certification rates, digital adoption, and stakeholder participation. Use data-driven insights to refine and scale successful interventions.

The success of initiatives like the Komodo Conservation Initiative illustrates the transformative potential of multi-stakeholder collaboration, but scaling such models will require sustained policy support and dedicated funding. Addressing these HR deficiencies will not only enhance service excellence and tourist satisfaction but also align NTT's tourism sector with Sustainable Development Goals (SDGs) 4 (Quality Education) and 8 (Decent Work).

Future research should:

- Conduct longitudinal studies to assess the long-term impacts of training and certification on workforce performance and destination competitiveness.
- Undertake deeper analyses of gender and regional disparities in tourism employment and advancement.
- Explore the effectiveness of different collaborative governance models in fostering innovation and resilience within NTT's tourism sector.

In summary, investing in human resource quality is an investment in NTT's sustainable and inclusive tourism future. By implementing these targeted interventions and fostering a culture of continuous learning and collaboration, NTT can position itself as a globally competitive, resilient, and sustainable tourism destination.

REFERENCE

- Abdul-Latif, S.-A. (2023). *Divers' Willingness to Pay for Conservation Efforts in Malaysia*. <https://www.researchgate.net/publication/369761685>
- Battiti, R., Brunato, M., & Battiti, F. (2020). RoomTetris: an optimal procedure for committing rooms to reservations in hotels. *Journal of Hospitality and Tourism Technology*, 11(4), 589–602. <https://doi.org/10.1108/JHTT-08-2019-0108>
- Baum, T., & Hai, N. T. T. (2019). Applying sustainable employment principles in the tourism industry: righting human rights wrongs? *Tourism Recreation Research*, 44(3), 371–381. <https://doi.org/10.1080/02508281.2019.1624407>
- Baum, T., Kralj, A., Robinson, R. N. S., & Solnet, D. J. (2016). Tourism workforce research: A review, taxonomy and agenda. *Annals of Tourism Research*, 60, 1–22. <https://doi.org/10.1016/j.annals.2016.04.003>
- Beaumont, E., Gedye, S., & Richardson, S. (2016). 'Am I employable?': Understanding students' employability confidence and their perceived barriers to gaining employment. *Journal of Hospitality, Leisure, Sport and Tourism Education*, 19, 1–9. <https://doi.org/10.1016/j.jhlste.2016.06.001>

- Becha, M., Riabi, O., Benmessaoud, Y., & Masri, H. (2020). Applications of Big Data in Tourism: A Survey. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 12447 LNAI, 533–546. https://doi.org/10.1007/978-3-030-65390-3_40
- Bramwell, B., & Lane, B. (2011a). Critical research on the governance of tourism and sustainability. *Journal of Sustainable Tourism*, 19(4–5), 411–421. <https://doi.org/10.1080/09669582.2011.580586>
- Bramwell, B., & Lane, B. (2011b). Critical research on the governance of tourism and sustainability. *Journal of Sustainable Tourism*, 19(4–5), 411–421. <https://doi.org/10.1080/09669582.2011.580586>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Case_Study_Research_and_Applications*. (n.d.).
- Chan, J. H., Iankova, K., Zhang, Y., McDonald, T., & Qi, X. (2016). The role of self-gentrification in sustainable tourism: Indigenous entrepreneurship at Honghe Hani Rice Terraces World Heritage Site, China. *Journal of Sustainable Tourism*, 24(8–9), 1262–1279. <https://doi.org/10.1080/09669582.2016.1189923>
- Chandra, P., & Kumar, J. (2021). Strategies for developing sustainable tourism business in the Indian Himalayan Region: Insights from Uttarakhand, the Northern Himalayan State of India. *Journal of Destination Marketing & Management*, 19, 100546. <https://doi.org/10.1016/j.jdmm.2020.100546>
- Chen, S., Wang, X., Zhang, H., Wang, J., & Peng, J. (2021). Customer purchase forecasting for online tourism: A data-driven method with multiplex behavior data. *Tourism Management*, 87, 104357. <https://doi.org/10.1016/j.tourman.2021.104357>
- Creswell, J. W. ., & Poth, C. N. . (2018). *Qualitative Inquiry & Research Design*. SAGE.
- Dávid, L. D., Rahmat, A. F., & Priatmoko, S. (2024). Main trends in the tourism industry in Indonesia between 2020–2023. In *Journal of Infrastructure, Policy and Development* (Vol. 8, Issue 11). EnPress Publisher, LLC. <https://doi.org/10.24294/jipd.v8i11.8162>
- Denzin, N. K. (2012). Triangulation 2.0. *Journal of Mixed Methods Research*, 6(2), 80–88. <https://doi.org/10.1177/1558689812437186>
- Eppang, B. M., Khalifa, Z., & Rijal, S. (2016). *Professional Certification for the Tourism Workforce: A Lesson from Indonesian Public Policy*. www.theinternationaljournal.org
- Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough? *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Guttentag, D. A. (2010). Virtual reality: Applications and implications for tourism. *Tourism Management*, 31(5), 637–651. <https://doi.org/10.1016/j.tourman.2009.07.003>

Hall, C. (2000). *Tourism Planning: Policies, Processes and Relationships*.

Huang, X., Zhang, L., & Ding, Y. (2017). The Baidu Index: Uses in predicting tourism flows –A case study of the Forbidden City. *Tourism Management*, 58, 301–306. <https://doi.org/10.1016/j.tourman.2016.03.015>

INDIKATOR KINERJA KUNCI KELUARAN DALAM RANGKA EKPPD TERHADAP LPPD TAHUN 2023 PROVINSI : Nusa Tenggara Timur. (n.d.).

J Fanggidae Dosen Jurusan Manajemen, A. H. (2018). *STRATEGI INDUSTRI PARIWISATA DALAM MENINGKATKAN KUNJUNGAN WISATAWAN DI NUSA TENGGARA TIMUR* (Vol. 7, Issue 2).

Jiang, B., & Tribe, J. (2009). Tourism jobs – short lived professions: Student attitudes towards tourism careers in China. *The Journal of Hospitality Leisure Sport and Tourism*, 8(1), 4–19. <https://doi.org/10.3794/johlste.81.168>

Kusluvan, S., Kusluvan, Z., Ilhan, I., & Buyruk, L. (2010). The Human Dimension. *Cornell Hospitality Quarterly*, 51(2), 171–214. <https://doi.org/10.1177/1938965510362871>

Ladkin, A. (2011). Exploring tourism labor. *Annals of Tourism Research*, 38(3), 1135–1155. <https://doi.org/10.1016/j.annals.2011.03.010>

Mahadewi, N. M. E., Puja, I. B. P., Mertha, I. W., Rathore, V. S., & Zamzuri, N. H. (2025). Quantum Tourism in Bali: Integrating Cultural Heritage with Advanced Technologies for a Transformative Travel Experience. *Jurnal Kajian Bali*, 15(1), 204–229. <https://doi.org/10.24843/JKB.2025.v15.i01.p08>

Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does Sample Size Matter in Qualitative Research?: A Review of Qualitative Interviews in is Research. *Journal of Computer Information Systems*, 54(1), 11–22. <https://doi.org/10.1080/08874417.2013.11645667>

Nieves, J., & Segarra-Ciprés, M. (2015). Management innovation in the hotel industry. *Tourism Management*, 46, 51–58. <https://doi.org/10.1016/j.tourman.2014.06.002>

Nunkoo, R. (2015). Tourism development and trust in local government. *Tourism Management*, 46, 623–634. <https://doi.org/10.1016/j.tourman.2014.08.016>

Okumus, F., Karamustafa, K., Sariisik, M., Ulama, S., & Turkay, O. (2016). Career paths of hotel general managers in Turkey. *Asia Pacific Journal of Tourism Research*, 21(11), 1214–1226. <https://doi.org/10.1080/10941665.2016.1140660>

Popa, A., Barbu, C. A., & Zaharia, R.-M. (n.d.). *Human Resources Management in Tourism Industry. qualitative-research-evaluation-methods-by-michael-patton*. (n.d.).

Sainaghi, R., Köseoglu, M. A., d'Angella, F., & Lawerh Tetteh, I. (2019). Foundations of hospitality performance measurement research: A co-citation approach. *International Journal of Hospitality Management*, 79, 21–40. <https://doi.org/10.1016/j.ijhm.2018.12.006>

- Sezer, S., & Oguzhan Ilban, M. (2024). *Digital Transformation in Tourism: Opportunities and Challenges for Türkiye and Mediterranean Countries*. <https://doi.org/10.29329/jtm.2024.1107.5>
- Sigala, M. (2020). Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *Journal of Business Research*, 117, 312–321. <https://doi.org/10.1016/j.jbusres.2020.06.015>
- statistik-indonesia-2016*. (n.d.).
- Stoffelen, A., & Ioannides, D. (2022). Introduction to the handbook of tourism impacts: Social and environmental perspectives. In *Handbook of Tourism Impacts: Social and Environmental Perspectives* (pp. 2–19). Edward Elgar Publishing Ltd. <https://doi.org/10.4337/9781800377684.00010>
- Tanemura, S., & Nagaishi, N. (n.d.). A study of the effectiveness of training programs in the tourism sector: The case of the Ishikawa Tourism Creation School, Japan. In *Journal of Global Tourism Research* (Vol. 7, Issue 1).
- Tourism and the Sustainable Development Goals – Journey to 2030*. (2017). World Tourism Organization (UNWTO). <https://doi.org/10.18111/9789284419401>
- UNWTO *Annual Report 2017*. (2018). World Tourism Organization (UNWTO). <https://doi.org/10.18111/9789284419807>
- Vargo, S. L., & Lusch, R. F. (2008). Service-dominant logic: continuing the evolution. *Journal of the Academy of Marketing Science*, 36(1), 1–10. <https://doi.org/10.1007/s11747-007-0069-6>
- Veal, A. J. (n.d.). *LEISURE AND TOURISM Fifth edition*. www.pearson.com/uk
- Waligo, V. M., Clarke, J., & Hawkins, R. (2013). Implementing sustainable tourism: A multi-stakeholder involvement management framework. *Tourism Management*, 36, 342–353. <https://doi.org/10.1016/j.tourman.2012.10.008>
- Wong, S. C., & Ko, A. (2009). Exploratory study of understanding hotel employees' perception on work–life balance issues. *International Journal of Hospitality Management*, 28(2), 195–203. <https://doi.org/https://doi.org/10.1016/j.ijhm.2008.07.001>
- Yang, Y., & Stienmetz, J. L. (2018). Big data and tourism planning. In *Information Technology and Tourism* (Vol. 20, Issues 1–4, pp. 189–190). Springer Berlin Heidelberg. <https://doi.org/10.1007/s40558-018-0127-6>
- Yasir, Y., Firzal, Y., Sulistyani, A., & Yesicha, C. (2021). Penta helix communication model through community based tourism (CBT) for tourism village development in Koto Sentajo, Riau, Indonesia. *Geojournal of Tourism and Geosites*, 37(3), 851–860. <https://doi.org/10.30892/GTG.37316-718>
- Yeung, R. M. W., & Yee, W. M. S. (2010). Chinese New Year Festival: Exploring consumer purchase intention at the flower market in Macau. *International Journal of Hospitality Management*, 29(2), 291–296. <https://doi.org/10.1016/j.ijhm.2009.10.006>

Zeithaml, V. A., & Berry, L. L. (n.d.). *SERVQUAL A Multiple-item Scale for Measuring Consumer Perceptions of Service Quality*. <https://www.researchgate.net/publication/200827786>