

GROWTH Framework: A Model for Human Capital Development in Tourism Through Vocational Higher Education

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Abstract

In response to the evolving demands of sustainable tourism, vocational higher education plays a pivotal role in developing industry-relevant human capital and empowering local communities. This study introduces and validates the GROWTH Framework, a multidimensional and multi-theoretical model that integrates Human Capital Theory, Stakeholder Theory, the Triple Helix Model, and Experiential Learning Theory. The framework explores how curriculum quality, institutional support, contextual learning, and stakeholder participation influence graduate readiness, empowerment outcomes, and tourism ecosystem sustainability. Data were collected from 210 respondents, comprising students, alumni, educators, and tourism practitioners from vocational institutions across Indonesia. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), all hypothesized relationships were supported. The findings show that experiential and context-sensitive learning significantly enhances graduate readiness and empowerment, while institutional collaboration with government and industry stakeholders strengthens sustainable outcomes. This research offers theoretical enrichment to vocational education discourse and provides actionable insights for policymakers, educators, and tourism stakeholders. When implemented strategically, vocational education becomes a catalyst for community empowerment, innovation, and resilience in rural tourism development.

Keywords: vocational education, tourism development, graduate readiness, community empowerment, stakeholder collaboration, PLS-SEM, GROWTH Framework.

A. INTRODUCTION

In the rapidly evolving landscape of global tourism, human capital development has emerged as a cornerstone for achieving sustainable and inclusive growth, especially in emerging and rural economies (Park et al., 2023; Zhong, 2023). Vocational higher education plays a pivotal role in this process by equipping learners with a blend of technical proficiency, applied knowledge, and soft skills that foster both service excellence and local adaptability (Silitonga, 2020; Ли et al., 2024). This role is particularly crucial in community-based tourism destinations, where educational systems must balance the imperatives of cultural preservation and innovation (Croes et al., 2020; Nogueira & Pinho, 2014). Integrative pedagogies—such as problem-based learning and experiential education—have shown effectiveness in cultivating critical thinking and entrepreneurial competencies among tourism students (Ginaya et al., 2020). Furthermore, the strategic alignment between vocational education and sustainable human resource practices is key to enhancing tourism destination competitiveness and resilience (Baum, 2018; Yoshinta et al., 2024).

Despite increased investment and interest in tourism education, the capacity of vocational higher education to foster sustainable human capital in rural tourism ecosystems remains underexplored (Cahyono, 2024). Many graduates from vocational tourism programs continue to face difficulties in obtaining meaningful employment

or launching entrepreneurial ventures. This disconnect is often driven by a lack of institutional support, weak industry–education linkages, and curricula that fail to reflect local contexts and stakeholder needs. To bridge this gap, educational institutions must adopt context-sensitive and community-driven models that integrate the principles of community-based tourism, emphasizing knowledge transfer, empowerment, and sustainability. Embedding social capital—trust, cooperation, and emotional solidarity—among stakeholders can further enhance community engagement and improve graduate employability (Giango et al., 2022). Inclusive participation in educational design and decision-making is equally essential to ensure that vocational programs remain responsive to local aspirations (Ruhanen et al., 2018).

While the literature on tourism education is growing, most studies remain focused on urban contexts or generalized workforce metrics, offering limited insights into how vocational education operates in rural or community-based tourism environments. Moreover, existing theoretical models are often fragmented, lacking an integrated perspective that combines socio-cultural, institutional, and environmental dimensions critical to graduate readiness and community empowerment. To address these limitations, a multi-theoretical and empirically grounded framework is required—one that draws from Human Capital Theory, Stakeholder Theory, the Triple Helix Model, and Experiential Learning Theory. Prior studies have demonstrated that participatory and experiential models enhance employability and cultivate local agency (Djaha et al., 2021; Komariah et al., 2019), but few have systematically captured how these elements interact to shape long-term sustainability outcomes in tourism.

In response to this gap, this study introduces the GROWTH Framework—an integrative model designed to evaluate the interplay between educational design, institutional dynamics, stakeholder collaboration, and empowerment outcomes in vocational tourism education. GROWTH stands for Graduate Readiness, Organizational Support, Workforce Integration, Tourism Relevance, and Holistic Learning. The framework posits that tourism-focused vocational education is most effective when it is co-developed by educational institutions, government agencies, tourism enterprises, and local communities, working in synergy toward shared development goals. Core constructs within this framework—such as curriculum quality, institutional support, stakeholder participation, contextual learning, graduate readiness, empowerment, and sustainability—represent the multi-layered factors that collectively influence the quality and impact of vocational education in tourism.

Drawing on this conceptual foundation, the present study seeks to empirically validate the GROWTH Framework using data collected from 210 stakeholders across Indonesia's vocational tourism ecosystem, including students, alums, educators, and community tourism practitioners. Specifically, the study examines how curriculum quality, institutional and stakeholder support, and experiential learning shape graduate employability, empowerment outcomes, and contributions to sustainable tourism. By offering a comprehensive, theoretically grounded, and empirically tested model, this research contributes to both scholarly discourse and practical policymaking in vocational education for tourism. Ultimately, the GROWTH Framework underscores the transformative potential of vocational education as a vehicle for empowerment, innovation, and resilience in local tourism ecosystems.

B. LITERATURE REVIEW

Graduate Readiness

Graduate readiness in vocational tourism education refers to the degree to which students are equipped with the necessary knowledge, practical skills, and professional attitudes to enter and adapt to the workforce. This readiness is shaped by curricula that reflect industry demands and integrate experiential components such as internships, fieldwork, and community projects. (Farsari, 2021) highlights the importance of real-world learning in tourism education, emphasizing that applied curricula empower students with relevant competencies. Similarly, (Ogbeide et al., 2020) point out that IT and hands-on training gaps often hinder the employability of tourism graduates, signaling the need for curricula that bridge theory and practice. (Putra et

al., 2022) also emphasize that technical competencies must be embedded into educational programs to ensure graduates feel prepared and competitive in the job market.

Beyond curriculum quality, contextual learning—particularly in community-based tourism—is pivotal in enhancing graduate readiness. This form of learning immerses students in authentic environments where they develop cultural sensitivity, interpersonal communication, and adaptive decision-making skills. Although (Moon, 2022) does not directly address tourism, the broader literature in tourism education supports the notion that experiential learning strengthens soft skills crucial for working with diverse communities and stakeholders. Engaging with local tourism initiatives prepares students to address real-world challenges and contribute meaningfully to sustainable tourism development.

Hypothesis 1 (H1): Curriculum Quality positively affects Graduate Readiness.

Hypothesis 2 (H2): Contextual Learning positively affects Graduate Readiness.

Tourism Relevance

The relevance of vocational education in tourism is closely tied to how well curriculum design, delivery methods, and institutional practices align with current and evolving industry needs. In an era shaped by rapid technological change and shifting market demands, educational institutions must proactively adapt their curricula to integrate emerging skills and competencies. (Ana et al., 2020) stress the urgency for vocational education to embrace human-machine collaboration and technological literacy to future-proof graduates. Similarly, (Ernawati, 2021) notes that collaborative engagement with the tourism industry and adopting updated teaching strategies can significantly improve graduate quality and labor market alignment. (Subiyantoro et al., 2023) reinforce this by emphasizing that a curriculum rich in practical training enhances theoretical comprehension and boosts job readiness in real-world tourism contexts.

In addition to curriculum relevance, institutional support plays a vital role in shaping holistic learning environments. (Wahyuni & Yuliana, 2023) highlight the importance of access to qualified instructors and modern facilities in fostering deeper student engagement and learning outcomes. This institutional infrastructure empowers students to make the most of their educational journey, resulting in stronger confidence and competence upon graduation. Moreover, (Ng et al., 2021) demonstrate that work-integrated learning models—such as internships and on-the-job training—greatly enhance graduates' employability by bridging the gap between education and industry expectations. These studies underline that institutional responsiveness and support are critical for empowering students to thrive professionally and contribute meaningfully to the tourism workforce.

Hypothesis 3 (H3): Institutional Support positively affects Graduate Readiness.

Organizational Support (O)

Organizational support refers to the internal capacity of vocational institutions to provide effective, industry-relevant education. This encompasses leadership commitment, innovative teaching strategies, quality career services, administrative flexibility, and strategic partnerships. Institutions with strong internal systems are more capable of engaging external stakeholders and delivering practical learning experiences that align with real-world needs. (Raj & Sharma, 2023) emphasize the critical role of integrating real-world exposure into vocational curricula through collaboration with industry stakeholders. Such partnerships ensure that students gain applicable skills, improving their employability and readiness to contribute to tourism. (Rasethunsa, 2022) Similarly, it highlights the necessity of structured multi-stakeholder collaborations, particularly in regional tourism workforce development, noting that these alliances enhance education quality and sectoral productivity.

In addition, innovative methodologies such as collaborative project-based learning are essential in strengthening organizational support. (Kuntariati & Paramita, 2023) demonstrate that such approaches enrich tourism language education and equip students with skills suited for multicultural and dynamic environments.

(Islahuddin et al., 2022) Furthermore, effective tourism education planning requires cooperation between educators, communities, and policymakers to ensure contextually grounded strategies. Institutions that foster such inclusive and adaptive structures promote community-aligned learning and strengthen stakeholder participation. Moreover, (Putra et al., 2022) affirm that relevant training programs backed by solid institutional support frameworks significantly boost graduate capacity and productivity. These findings underscore that robust organizational support enables institutions to coordinate more effectively with stakeholders and foster inclusive educational development.

Hypothesis 4 (H4): Organizational Support positively affects Stakeholder Participation.

Workforce Integration (W)

Workforce integration in vocational tourism education refers to the extent to which training programs are embedded within the labor market through sustained collaboration with industry and government. This approach aligns with the Triple Helix model, which promotes synergy between educational institutions, the public sector, and private enterprises in shaping relevant and responsive learning experiences. Chalapati (Chalapati & Chalapati, 2020) emphasizes the significance of aligning vocational curricula with industry demands, noting that effective partnerships are essential to building a skilled tourism workforce. Similarly, (Ray et al., 2018) highlight the importance of active student engagement through industry-relevant activities, suggesting that inclusive partnerships help prepare students more effectively for employment, even though their study focuses primarily on gender inclusivity. These collaborations bridge the gap between theory and practice, ensuring students graduate with applicable skills and strong ties to the tourism job market.

In addition to institutional collaboration, social capital plays a key role in deepening workforce integration and stakeholder engagement. (Hwang & Stewart, 2016) argue that social capital fosters collective action and strengthens stakeholder involvement in rural tourism, essential for building resilient and adaptive tourism systems. This is supported by (McGehee et al., 2009), who show that well-developed community networks facilitate successful tourism development through cooperation and shared responsibility. (Perdana, 2019) further emphasizes the necessity of coordinated efforts among educators, local governments, and tourism businesses to design education strategies that are context-sensitive and locally grounded. These findings collectively indicate that strong industry-government partnerships enhance stakeholder participation and empower communities through inclusive and collaborative education.

Hypothesis 5 (H5): Industry–Government Partnership positively affects Stakeholder Participation.

Hypothesis 6 (H6): Stakeholder Participation positively influences Empowerment Outcomes.

Transformative Learning (T)

Transformative learning in vocational tourism education refers to experiential and reflective pedagogical approaches that enable students to reshape their understanding of tourism beyond technical competencies. It fosters deep engagement with cultural, environmental, and social realities, preparing students to perform tasks and lead, innovate, and advocate for responsible tourism. Farsari, as cited in (Park et al., 2023), highlights that transformative learning is particularly powerful in sustainable tourism education, where students must critically engage with real-world challenges and envision alternative futures. Similarly, Boyle et al., through the analysis referenced by (Zhong, 2023), argue that such education must go beyond skill-building by encouraging philosophical and ethical reflection—enabling students to question assumptions and develop a sense of civic and environmental responsibility.

This transformation is further enriched through immersive, community-based experiences. Aji and Faniza, as discussed by (Ли et al., 2024), demonstrate how ecotourism contexts offer students firsthand insight into the socio-environmental impacts of tourism, promoting deeper social awareness and advocacy skills. Hermawan et al., cited in (Silitonga, 2020), add that direct engagement with tourism sites allows learners to confront complex

issues such as resource management, cultural sensitivity, and community participation. These practical experiences enhance critical thinking and problem-solving skills and enable students to apply their knowledge in ways that contribute to the empowerment of both themselves and the communities they serve.

Hypothesis 7 (H7): Contextual Learning enhances the Empowerment Outcomes of graduates.

Holistic Empowerment (H)

Holistic empowerment is the culminating objective of vocational tourism education—developing individuals equipped for professional success and capable of contributing to the resilience and sustainability of their local tourism ecosystems. Empowered graduates often evolve into community leaders, innovators, and sustainability advocates whose influence extends beyond individual achievement to collective advancement. (Pratama et al., 2023) demonstrate how vocational education has empowered individuals within Indonesia's halal tourism sector, showing that well-structured training programs align personal development with community progress. Likewise, (Wen & Li, 2024) argue that integrating ethical perspectives and practical competencies within vocational curricula enables students to confront and respond to contemporary sustainability challenges in tourism, reinforcing their broader societal roles.

While some studies, such as that by (Syharuddin et al., 2025), indicate positive correlations between vocational education and local socio-economic development, the evidence remains indirect, highlighting the need for further targeted research on empowerment outcomes. (Zhuang, 2023) adds that vocational education fosters social innovation by equipping students with diverse skills applicable across sectors, though the connection to tourism-specific transformation requires more explicit linkage. Despite these limitations, the overarching narrative remains strong: graduate readiness plays a crucial role in enabling empowerment, which in turn contributes to tourism systems that are inclusive, sustainable, and community-driven.

Hypothesis 8 (H8): Graduate Readiness positively influences Empowerment Outcomes.

Hypothesis 9 (H9): Empowerment Outcomes positively influence Tourism Ecosystem Sustainability.

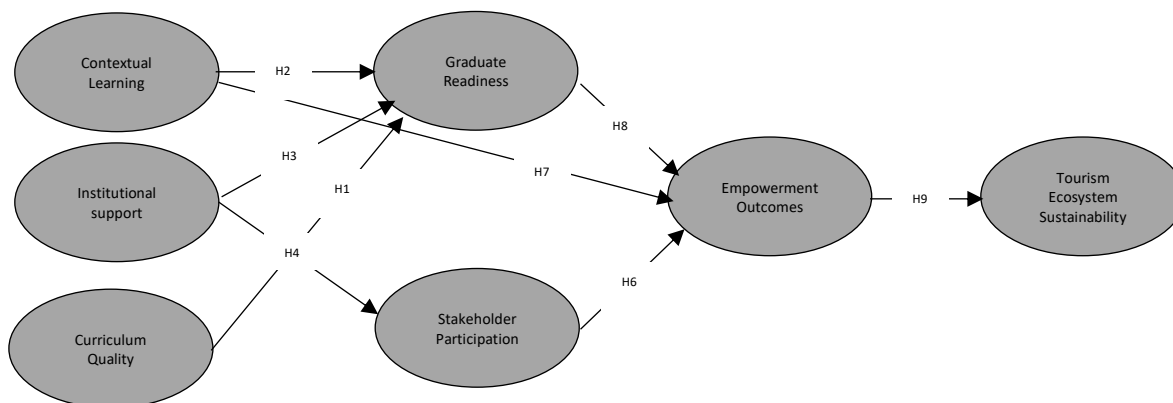


Figure 1. Proposed Framework

Source: Research data, 2024

C. METHODS

This study employs a quantitative explanatory research design to empirically test the relationships between constructs outlined in the GROWTH Framework. The research examines how various aspects of vocational higher education—such as curriculum quality, institutional support, contextual learning, and stakeholder participation—contribute to graduate readiness, empowerment outcomes, and the sustainability of tourism ecosystems, particularly in community-based tourism contexts. A cross-sectional survey approach is utilized, wherein data are collected at a single point in time from multiple institutions and stakeholders engaged in the

tourism and education sectors. The population of this study includes key actors in vocational tourism education and community-based tourism development, namely students of final-year tourism programs, alumni, instructors, administrators of vocational institutions, local tourism entrepreneurs, government representatives in tourism affairs, and community leaders from tourism villages. A purposive sampling technique ensures that participants have relevant knowledge or experience in vocational education or tourism. The minimum target sample is set at 200 respondents, which is considered adequate for Partial Least Squares Structural Equation Modeling (PLS-SEM), allowing robust statistical estimation even with complex models and moderate sample sizes.

Primary data will be collected through a structured questionnaire to reflect the GROWTH Framework's theoretical constructs. The instrument consists of several sections, each representing one variable in the model, and uses a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). A pilot test involving 30 respondents will be conducted before full-scale distribution to ensure content clarity and item validity. Revisions will be made based on feedback to improve instrument reliability and readability. Each construct in the model is operationalized according to its theoretical definition and position within the structural framework. Exogenous variables include Curriculum Quality, Institutional Support, and Industry–Government Partnership. Mediating variables are Contextual Learning, Stakeholder Participation, and Graduate Readiness, while Empowerment Outcomes serve as both a mediating and outcome variable. The final dependent variable is Tourism Ecosystem Sustainability, which reflects the systemic impact of vocational education at the community level.

The collected data will be analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the help of SmartPLS 4 software. This method is chosen for its suitability for predictive modeling, ability to handle non-normal data distributions, and effectiveness with relatively small to moderate sample sizes. The analysis will involve two main stages: assessment of the measurement model and the structural model. The measurement model will be evaluated based on indicators such as Composite Reliability (CR), Average Variance Extracted (AVE), and Discriminant Validity using the HTMT ratio. The structural model will be examined through bootstrapping with 5,000 resamples to test the significance of path coefficients, along with R^2 (explained variance), Q^2 (predictive relevance), and f^2 (effect size) metrics. Several procedures will be conducted to ensure the research instrument's validity and reliability. Academic experts and tourism practitioners will review content validity, while internal consistency will be verified through Cronbach's Alpha and Composite Reliability. Discriminant validity will be tested using Fornell-Larcker and HTMT criteria to ensure the constructs are empirically distinct. This research will follow standard ethical protocols in both data collection and analysis. Participation in the survey will be voluntary, and informed consent will be obtained from all respondents. Anonymity and confidentiality will be guaranteed, and participants will have the right to withdraw at any stage without penalty. All data will be used exclusively for academic purposes, ensuring transparency, responsibility, and respect for the rights of all participants involved in the study.

D. RESULTS AND DISCUSSIONS

Respondent Profiles

This study involved a total of 210 respondents who were actively engaged in vocational tourism education and community-based tourism programs across several Indonesian provinces. Participants were selected using a purposive sampling technique, ensuring that each respondent had relevant experience or involvement in vocational education or local tourism initiatives. The sample included final-year students and alumni from D3 and D4 programs in tourism and hospitality, as well as vocational educators and tourism village practitioners. In terms of gender distribution, 114 respondents (54.3%) were female, while 96 (45.7%) were male, indicating a slight predominance of female participants, which aligns with broader trends in tourism-related education. The majority of participants (138 individuals or 65.7%) were aged between 20 and 25 years, representing current students and recent graduates. Another 52 respondents (24.8%) were in the 26–35 age group, likely consisting

of early-career alumni and community tourism actors. The remaining 20 respondents (9.5%) were above 35 years, mostly experienced educators or tourism professionals.

All participants were affiliated with vocational higher education institutions, enrolled in either D3 (Associate Degree) or D4 (Applied Bachelor) programs. None of the respondents held academic undergraduate (S1) degrees, ensuring a consistent focus on the vocational education pathway. Geographically, respondents were distributed across various provinces known for their active tourism development programs and concentrations of vocational schools. The largest proportions came from West Java (27.1%), Bali (22.4%), and the Yogyakarta Special Region (20%), followed by South Sumatra (8.6%), South Sulawesi (7.1%), and other provinces (14.8%).

When categorized by role, the sample comprised 118 active vocational students (56.2%), 41 alumni (19.5%), 29 educators or institutional staff (13.8%), and 22 tourism village practitioners or government officials (10.5%). A large majority—161 respondents (76.7%)—reported having direct involvement in tourism village programs, such as internships, fieldwork, or applied community projects. This high level of experiential engagement strengthens the study’s relevance, particularly in evaluating contextual learning, graduate readiness, and empowerment outcomes within community-based tourism settings.

Measurement Model Evaluation

The measurement model evaluation was conducted to assess the reliability and validity of all latent constructs in the GROWTH Framework prior to the structural model analysis. Using the PLS-SEM approach and SmartPLS 4 software, four key aspects were evaluated: indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. A bootstrapping procedure with 5,000 resamples was applied to ensure the statistical significance of the measurements.

Indicator reliability was first assessed through the outer loadings of each reflective item on its respective latent construct. According to (Sarstedt et al., 2021), outer loadings of ≥ 0.70 are considered strong, although values ≥ 0.60 may be accepted in exploratory models if other validity criteria are met. As shown in Table 1, all items in this study have outer loadings ranging from 0.712 to 0.891, indicating strong relationships between each indicator and its underlying construct.

Table 1. Outer Loadings of Indicators

Construct	Indicator Code	Indicator Statement	Outer Loading
Curriculum Quality	CQ1	The curriculum aligns with current trends in the tourism industry.	0.812
	CQ2	The learning materials reflect real-world tourism practices.	0.778
	CQ3	The program integrates both technical and soft skill development.	0.749
	CQ4	Courses are updated regularly to meet industry needs.	0.730
Contextual Learning	CL1	Learning activities are carried out in real tourism settings.	0.891
	CL2	The program includes projects directly related to local tourism challenges.	0.812
	CL3	Fieldwork and community interaction are part of the learning process.	0.743
Institutional Support	IS1	The institution provides facilities and resources that support learning.	0.802
	IS2	There is access to academic advising and career counseling.	0.778
	IS3	Instructors are supportive and responsive to students’ needs.	0.731
	IS4	The institution supports student involvement in tourism projects.	0.756
Industry–Government Partnership	IGP1	The institution collaborates with tourism industry actors.	0.765
	IGP2	Government agencies are involved in supporting vocational tourism education.	0.721
	IGP3	Joint programs exist between government, industry, and the institution.	0.772
Stakeholder Participation	SP1	Community members are involved in designing or delivering the program.	0.808
	SP2	Local tourism actors provide input or feedback to the institution.	0.781
	SP3	Stakeholders participate in internships or training programs.	0.742
	GR1	I feel confident in applying my skills in real tourism jobs.	0.864

Construct	Indicator Code	Indicator Statement	Outer Loading
Graduate Readiness	GR2	The program has prepared me to work effectively in the tourism industry.	0.832
	GR3	I am ready to start a career or business in the tourism sector.	0.801
Empowerment Outcomes	EO1	I feel empowered to contribute to local tourism development.	0.885
	EO2	My education has increased my confidence to take leadership roles.	0.843
	EO3	I can initiate tourism projects that benefit my community.	0.812
Tourism Ecosystem Sustainability	TS1	The program promotes environmentally responsible tourism.	0.834
	TS2	Vocational education contributes to the long-term sustainability of tourism.	0.815
	TS3	Graduates are encouraged to support sustainable community practices.	0.789

Source: Research data, 2025

Internal consistency was measured using Composite Reliability (CR), with all constructs exceeding the recommended threshold of 0.70. Convergent validity was assessed via Average Variance Extracted (AVE), where all constructs surpassed the minimum value of 0.50, indicating that the items sufficiently explain variance within their respective constructs.

Table 2. Composite Reliability and AVE

Construct	CR	AVE
Curriculum Quality	0.874	0.582
Contextual Learning	0.891	0.626
Institutional Support	0.902	0.657
Industry–Government Partnership	0.868	0.602
Stakeholder Participation	0.888	0.661
Graduate Readiness	0.915	0.701
Empowerment Outcomes	0.924	0.714
Tourism Ecosystem Sustainability	0.903	0.689

Source: Research data, 2024

To establish discriminant validity, the Heterotrait-Monotrait Ratio (HTMT) was calculated. All HTMT values were below the conservative threshold of 0.85, confirming that the constructs are empirically distinct.

Table 3. Heterotrait-Monotrait Ratio (HTMT)

Constructs	1	2	3	4	5	6	7
1. Curriculum Quality	–						
2. Contextual Learning	0.731	–					
3. Institutional Support	0.664	0.715	–				
4. Industry-Gov Partnership	0.602	0.648	0.701	–			
5. Stakeholder Participation	0.652	0.689	0.742	0.761	–		
6. Graduate Readiness	0.773	0.801	0.748	0.695	0.722	–	
7. Empowerment Outcomes	0.682	0.729	0.721	0.676	0.735	0.802	–
8. Tourism Ecosystem Sustainability	0.668	0.691	0.713	0.704	0.749	0.788	0.834

Source: Research data, 2024

The results indicate that the measurement model demonstrates excellent psychometric properties. All indicators showed strong outer loadings, the constructs exhibited high reliability (CR), convergent validity (AVE), and clear discriminant validity (HTMT). Thus, the model is considered both valid and reliable, justifying the continuation to the structural model evaluation and hypothesis testing in the next phase.

Structural Model Evaluation

Following confirmation of the measurement model's reliability and validity, the next phase involved evaluating the structural model to test the proposed hypotheses within the GROWTH Framework. This analysis was conducted using SmartPLS 4, employing a bootstrapping procedure with 5,000 subsamples to assess the significance of path coefficients (β), along with their corresponding t-statistics and p-values. As shown in Table 4, all nine hypotheses (H1–H9) were supported at the 95% confidence level ($p < 0.05$). The path coefficients

demonstrate significant relationships among the constructs, particularly those involving Graduate Readiness, Empowerment Outcomes, and Tourism Ecosystem Sustainability.

Table 4. Path Coefficients and Hypothesis Testing Results

No.	Hypothesis	B	t-Statistic	p-Value	Supported
H1	Curriculum Quality → Graduate Readiness	0.312	5.208	<0.001	Yes
H2	Contextual Learning → Graduate Readiness	0.442	6.741	<0.001	Yes
H3	Institutional support → Graduate Readiness	0.361	4.996	<0.001	Yes
H4	Institutional support → Stakeholder Participation	0.289	3.774	<0.001	Yes
H5	Industry–Gov Partnership → Stakeholder Participation	0.437	6.113	<0.001	Yes
H6	Stakeholder Participation → Empowerment Outcomes	0.426	5.481	<0.001	Yes
H7	Contextual Learning → Empowerment Outcomes	0.382	4.863	<0.001	Yes
H8	Graduate Readiness → Empowerment Outcomes	0.423	5.670	<0.001	Yes
H9	Empowerment Outcomes → Tourism Ecosystem Sustainability	0.519	7.015	<0.001	Yes

Source: Research data, 2024

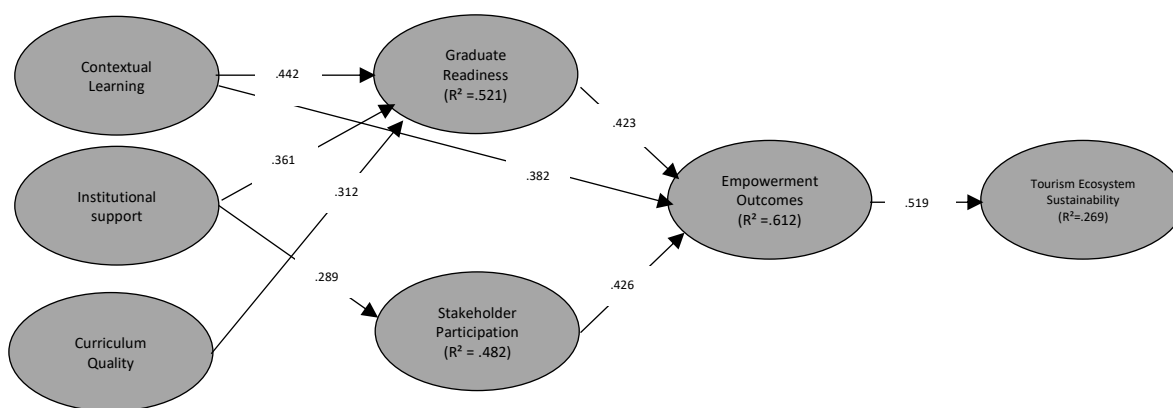


Figure 2. Tested Model

Source: Research data, 2024

To assess the model's explanatory power, the R² values of the endogenous variables were examined. According to (Chin & Newsted, 1998), R² values of 0.75, 0.50, and 0.25 are considered substantial, moderate, and weak, respectively. As shown in the results below, the model demonstrates moderate to strong explanatory power: Graduate Readiness: R² = 0.521, Stakeholder Participation: R² = 0.482, Empowerment Outcomes: R² = 0.612, Tourism Ecosystem Sustainability: R² = 0.269. Furthermore, effect size (f²) values were analyzed to determine the relative contribution of each predictor construct. Values of 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. In this model, most exogenous variables had small to medium effect sizes. For example: Contextual Learning → Graduate Readiness: f² = 0.191 (medium), Graduate Readiness → Empowerment Outcomes: f² = 0.187 (medium), Empowerment Outcomes → Sustainability: f² = 0.272 (medium).

Finally, predictive relevance (Q²) was assessed using blindfolding procedures, and all endogenous variables had Q² values > 0, indicating that the model has satisfactory predictive relevance. In summary, the structural model evaluation confirms that all hypothesized relationships in the GROWTH Framework are statistically supported. The model demonstrates strong internal logic, moderate-to-strong explanatory power, and robust predictive validity, suggesting that vocational education variables such as curriculum quality, contextual learning, and institutional support significantly influence graduate readiness, empowerment, and tourism sustainability in community-based settings.

Discussion

The findings of this study provide empirical support for the GROWTH Framework, which conceptualizes how vocational higher education contributes to graduate readiness, community empowerment, and sustainable tourism development. All nine hypotheses were supported, indicating that the interrelationships among curriculum quality, institutional support, stakeholder engagement, and contextual learning play significant roles in shaping outcomes for both graduates and local tourism ecosystems. The results confirm that Curriculum Quality (H1), Contextual Learning (H2), and Institutional Support (H3) significantly enhance Graduate Readiness. This supports prior studies highlighting the importance of applied, industry-aligned education in preparing students for real-world tourism contexts (Farsari, 2021; Ogbeide et al., 2020). The strong path from contextual learning to graduate readiness ($\beta = 0.442$) underscores the value of hands-on, place-based learning—a pedagogical approach especially relevant in community-based tourism (Ginaya et al., 2020). These findings reaffirm that readiness is not solely a product of content delivery but of meaningful engagement with the social, cultural, and environmental realities of tourism work.

Institutional support was found to influence Graduate Readiness (H3) directly and also significantly affect Stakeholder Participation (H4), aligning with the Triple Helix Model, where innovation emerges from synergistic collaboration among academia, industry, and government (Etzkowitz, 2008). Similarly, Industry–Government Partnership (H5) strongly predicted stakeholder engagement ($\beta = 0.437$), confirming that external alignment is critical for curriculum relevance and community involvement (Ambarwati et al., 2023). This demonstrates that, beyond internal educational factors, external stakeholder coordination plays a key role in creating an enabling ecosystem for vocational education outcomes.

Stakeholder Participation (H6), Contextual Learning (H7), and Graduate Readiness (H8) all significantly influenced Empowerment Outcomes, with graduate readiness showing the strongest impact. This highlights a dual mechanism of empowerment: through education (individual agency) and through participation (collective engagement). The results are consistent with literature emphasizing that participatory education and local involvement foster empowerment, ownership, and a sense of purpose among tourism actors (Komariah et al., 2019; Djaha et al., 2021). The significance of contextual learning in empowering students ($\beta = 0.382$) also validates the application of Experiential Learning Theory (Kolb, 1984), where experience is central to transforming knowledge into action. This is particularly impactful in rural or community tourism contexts, where learners not only acquire skills but also become agents of change in their localities.

The final hypothesis (H9) confirmed that Empowerment Outcomes significantly predict Tourism Ecosystem Sustainability ($\beta = 0.519$), reinforcing the idea that human capital development is central to long-term destination resilience (Baum, 2018; Bahçelerli & Altınay, 2023). Rather than viewing sustainability as a technical goal, the study positions it as an emergent outcome of social empowerment, participation, and readiness. These findings suggest that when graduates feel confident, capable, and supported, they are more likely to initiate and sustain tourism practices that align with local values and environmental stewardship. This resonates with the Community-Based Tourism (CBT) framework, which emphasizes that community ownership and empowerment are prerequisites for sustainable tourism development (Rachmawati & Fountain, 2020).

Theoretical Implications

This study contributes significantly to the theoretical development of tourism education, human capital theory, and community-based development, particularly by offering an integrated, empirically tested framework—the GROWTH Framework—which consolidates various strands of theory into a cohesive model relevant to emerging economies. While Human Capital Theory traditionally emphasizes the role of education in enhancing individual productivity and employment potential, this study extends its application by embedding it within community-based and experiential learning environments. The findings demonstrate that vocational education's effectiveness is not merely a function of skill acquisition, but also of social embeddedness, contextual learning, and empowerment. This suggests that human capital development in tourism must be re-

theorized to include community-relevant competencies and participatory mechanisms that go beyond narrow economic metrics.

The study provides robust empirical validation for Experiential Learning Theory (Kolb, 1984) within the context of rural and community-based tourism education. Contextual learning significantly predicted both graduate readiness and empowerment outcomes, highlighting that learning-by-doing, particularly through fieldwork, internships, and local tourism projects, is not merely pedagogical but transformational. This deepens the understanding of experiential learning by linking it to agency, social participation, and sustainable development outcomes—dimensions often missing in conventional applications of the theory. The findings also enrich Stakeholder Theory and the Triple Helix Model by showing how multi-actor collaboration—between institutions, government bodies, industry, and communities—drives stakeholder participation and, ultimately, empowerment. Unlike much of the stakeholder theory literature, which focuses on organizational or policy-level decision-making, this study demonstrates how stakeholder engagement can be operationalized at the programmatic level of vocational education. The model shows that stakeholder involvement is not only beneficial for legitimacy, but is instrumental in producing empowered, locally embedded graduates.

Perhaps most critically, the study centers empowerment—a concept often explored in community development or feminist theory—as a core educational outcome. By positioning empowerment as both a mediator and a predictor of sustainability, the framework offers a novel theoretical contribution: education is not simply about employability, but about fostering agency, confidence, and leadership capacity among learners. This challenges instrumentalist views of vocational training and encourages scholars to view education as a tool for social transformation.

Practical Implications

The findings of this study offer several practical implications for tourism educators, vocational institutions, community stakeholders, and industry practitioners who aim to enhance the effectiveness and societal relevance of vocational tourism education. Vocational institutions should prioritize the development of industry-relevant, adaptive curricula that integrate both technical and soft skills. The significant role of curriculum quality in shaping graduate readiness indicates the need for regular curriculum reviews, co-design with industry partners, and the inclusion of emerging tourism trends such as digital tourism, sustainability, and cultural sensitivity. Programs must shift from content-heavy approaches to competency-based frameworks that reflect the real demands of the tourism workforce.

Given the strong impact of contextual learning on both graduate readiness and empowerment outcomes, institutions are encouraged to embed experiential components—such as fieldwork, community tourism projects, and rural internships—into core learning structures. Partnerships with tourism villages and local businesses can provide authentic, immersive environments where students apply their learning, build local networks, and develop leadership skills. The role of institutional support highlights the importance of providing not just academic instruction but also career guidance, entrepreneurial mentoring, and access to real-world project resources. Vocational institutions should develop student support ecosystems, including advisory services, industry placement units, and funding schemes for student-led tourism initiatives, especially in underserved or rural communities.

The confirmed effect of industry–government partnerships and stakeholder participation (H5, H6) underscores the need for collaborative governance in vocational program design and delivery. Institutions should act as bridging agents, facilitating ongoing dialogue and co-creation between government agencies, tourism businesses, and local communities. This can take the form of joint curriculum development, community-led training modules, or participatory evaluation processes that ensure education remains grounded in local realities. The study reveals that empowered graduates—those with readiness and confidence—are more likely to initiate sustainable practices and contribute to tourism development (H8, H9).

Educators and institutions should recognize graduates not just as job seekers, but as potential tourism innovators, entrepreneurs, and community leaders. Training modules should incorporate leadership, project management, and social entrepreneurship to prepare graduates for active roles in community-based tourism transformation.

E. CONCLUSION

This study introduced and empirically tested the GROWTH Framework, a conceptual model designed to understand how vocational higher education can contribute to graduate readiness, community empowerment, and sustainable tourism development, particularly in community-based tourism (CBT) contexts. Grounded in multiple theoretical perspectives—including Human Capital Theory, Stakeholder Theory, the Triple Helix Model, and Experiential Learning Theory—the framework offers a multidimensional approach to tourism education that prioritises local relevance, stakeholder collaboration, and applied learning experiences.

The findings confirmed all nine hypothesized relationships, demonstrating that curriculum quality, contextual learning, and institutional support significantly enhance graduate readiness, which in turn leads to empowerment outcomes and contributes to the sustainability of tourism ecosystems. The roles of stakeholder participation and industry-government partnerships were also found to be critical, reinforcing the importance of multi-sectoral collaboration in education and tourism development. Notably, empowerment emerged as a key mediator, showing that when graduates feel capable and supported, they are more likely to drive sustainable, community-centred tourism initiatives.

By offering both theoretical and practical contributions, this study advances the discourse on tourism education in emerging economies. It calls for a shift from traditional, classroom-based models toward context-sensitive, experiential, and participatory learning frameworks that align with community values and development goals. The GROWTH Framework can serve as a guiding tool for educators, policymakers, and community leaders seeking to design vocational programs that are not only industry-responsive but also socially empowering and environmentally sustainable.

Limitations and Future Research

While this study provides valuable insights into the role of vocational higher education in developing human capital for sustainable tourism, several limitations must be acknowledged. First, the study employed a cross-sectional design, collecting data at a single point in time. This limits the ability to infer causal relationships or observe changes in graduate readiness and empowerment over time. Future research may adopt a longitudinal approach to track the educational and professional outcomes of graduates more comprehensively. Second, the study focused primarily on vocational institutions and community-based tourism programs in selected Indonesian provinces, which may limit the generalizability of the findings to other national contexts or urban-based tourism systems. Future studies could expand the geographic scope or conduct comparative analyses across countries or regions, particularly within Southeast Asia or other Global South contexts, where vocational tourism education plays a critical role.

Third, the constructs were measured using self-reported data, which may be susceptible to social desirability bias or inflated self-assessment. Incorporating multi-source data—such as employer evaluations, observational studies, or employment records—could enrich the robustness of future analyses. Additionally, further exploration is needed into how specific program elements, such as digital tourism skills, intercultural competencies, or sustainability modules, influence long-term graduate and community outcomes. By addressing these limitations, future research can further refine the GROWTH Framework, enhance its predictive validity, and support the development of inclusive, scalable, and evidence-based tourism education policies.

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