

Factors Triggering the Development of Applied Master's Education in Tourism in Indonesia: The Case of State Polytechnic of Bali

ABSTRACT

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This study examines the effectiveness of an applied master's program in tourism business planning at the State Polytechnic of Bali (Matrappar-PNB) through a mixed methods approach. The research investigates the interplay between industry demands, government policy, and program management in shaping vocational higher education outcomes in Indonesia's tourism sector. Quantitative data were collected from 79 alumni and 79 employers using structured surveys, while qualitative insights were gathered through in-depth interviews with key stakeholders. Findings revealed strong alignment between the program's curriculum and industry needs, with alumni demonstrating high competency levels in problem-solving and leadership skills. Government policies were identified as crucial enablers of industry-based learning processes, although implementation challenges remain. The program's success was further attributed to effective organizational culture, strategic external partnerships, and targeted communication strategies. The study contributes to the understanding of applied higher education in tourism by proposing a conceptual framework that integrates industry requirements, policy frameworks, and institutional readiness. Recommendations include strengthening entrepreneurship education, enhancing industry immersion experiences, and developing more robust assessment mechanisms for applied learning outcomes.

Keywords: Applied higher education, tourism business planning, vocational education, mixed methods research, industry-academia collaboration, Indonesia

1. Introduction

The tourism industry is a critical economic driver for Southeast Asia, particularly Indonesia, where it contributed 4.1% to the national GDP prior to the COVID-19 pandemic (BPS, 2023). As the sector recovers, the need for a resilient and innovation-driven workforce has grown, underscoring the importance of applied and vocational higher education. Traditional academic approaches often fall short in addressing these evolving demands, especially in dynamic fields like tourism, which require not only technical expertise but also agility, digital fluency, and cross-sector collaboration (Airey, 2015; Choi et al., 2023).

In response, Indonesia has made substantial policy and institutional reforms to support vocational and applied education. These reforms include the establishment of polytechnics as key institutions under Law No. 12 of 2012 and the promotion of industry-based learning through Ministerial Regulations No. 3/2020 and No. 53/2023. These efforts align with global shifts toward competency-based, practice-oriented learning that prepares graduates for the complexities of modern tourism economies.

Within this context, the Master of Applied Tourism Business Planning (Matrappar-PNB) at the State Polytechnic of Bali stands out as a model of applied higher education. It blends experiential learning with government-supported frameworks and strong industry partnerships. Despite the program's apparent success, empirical studies examining its impact remain scarce.

This study addresses this research gap by exploring how Matrappar-PNB integrates government policy, industry demands, and program management to deliver vocational education outcomes. By using a mixed-methods approach, we analyze how experiential and competency-based pedagogies—rooted in the works of Kolb (1984) and Boyatzis (1982)—enhance employability and institutional effectiveness. The findings offer broader insights into how applied higher education can be structured to bridge the gap between education and employment, supporting ongoing reforms in Indonesia and other developing countries.

2. Literature Review

Applied Higher Education in the Context of Indonesian Tourism

Indonesia's higher education system encompasses two distinct educational tracks: academic and applied (vocational) pathways. While academic education primarily emphasizes theoretical knowledge and research competencies, applied education focuses on practical skills development and workplace readiness (Directorate General of Higher Education, 2020). This distinction is formalized in Indonesia's Law No. 12 of 2012 on Higher Education, which established polytechnics as key institutions for delivering vocational education at the diploma, bachelor, and master's levels (Wibowo et al., 2022).

The development of vocational education in Indonesia has experienced significant growth over the past decade, with polytechnics playing an increasingly important role in addressing labor market needs (Ernawati & Pearce, 2003; Tondang, 2024). This expansion has been particularly evident in the tourism sector, where rapid industry growth has created demand for specialized skills in areas such as destination management, hospitality operations, and sustainable tourism development (Hendarman & Tjakraatmadja, 2012). As noted by Sulistyo-Basuki (2014),

polytechnics in Indonesia have evolved from purely technical institutions to comprehensive providers of applied education across multiple sectors, including tourism and hospitality.

Kolb's Experiential Learning Theory (1984) provides a theoretical foundation for applied learning approaches in tourism education. This theory emphasizes a four-stage cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation.

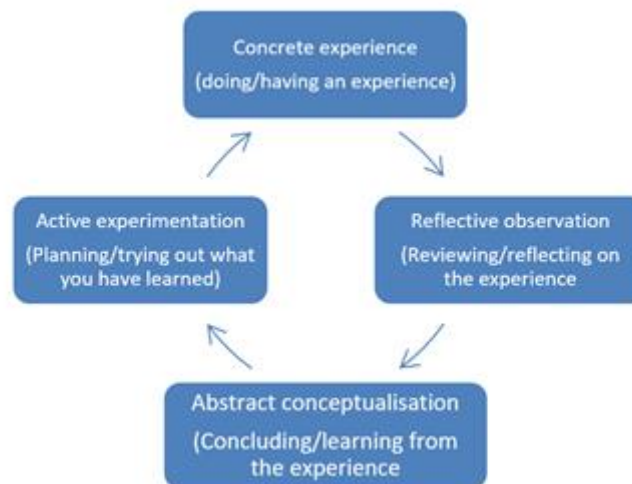


Figure 1. Four Stage Cycle of Concrete Experience
Source: Kolb (1984)

In the context of tourism education, this translates to learning through industry immersion, critical reflection on practice, theoretical integration, and application to real-world problems (Kolb & Kolb, 2017). The Matrappar-PNB program exemplifies this approach through its emphasis on industry projects, practical case studies, and field-based learning experiences (Yusuf et al, 2018). The development of the research framework and instruments in this study is firmly grounded in the theoretical constructs discussed in the preceding sections. The pedagogical design of applied master's education in tourism at the State Polytechnic of Bali is anchored in two complementary theoretical models: Kolb's Experiential Learning Theory (1984) (Figure 1) and Boyatzis's Competency-Based Education Framework (1982) (Figure 2). Kolb's model emphasizes learning as a continuous process through four interrelated stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation, which inform the program's project- and problem-based learning activities. Meanwhile, Boyatzis's framework provides a structured approach to identifying and developing competencies across cognitive, functional, and behavioral domains. Together, these models underpin both curriculum design and competency assessment, ensuring that applied learning outcomes are theoretically grounded and aligned with industry expectations.

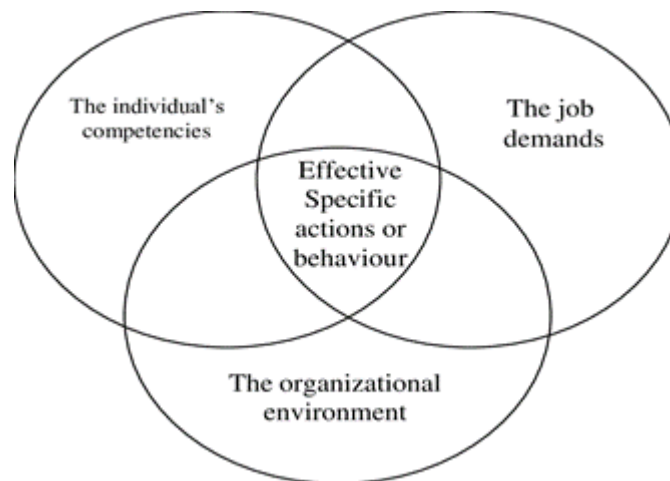


Figure 2. Competency Based Education Framework
Source: Boyatzis (1982)

This framework focuses on the systematic assessment and development of competencies across cognitive, functional, personal, and ethical domains (Boyatzis, 2008). Applied tourism education programs in Indonesia increasingly adopt competency-based approaches, allowing for more precise alignment between curriculum design and industry requirements (Yusul et al, 2018; Nurmoko, 2024). Competency-Based Education framework guides the identification and operationalization of skill domains expected by employers in the tourism sector. This is reflected in the employer survey instrument (Figure 4), which measures aspects like applied problem-solving, leadership, and industry relevance. The synthesis of these theories ensures that both instruments are not only contextually grounded but also aligned with best practices in vocational education research. Thus, the variables derived from Kolb and Boyatzis provide a theoretically sound and empirically relevant basis for examining the effectiveness and strategic fit of the Matrapar-PNB program.

Industry Demand for Applied Graduate Competencies

The tourism industry in Indonesia has undergone significant transformation in recent years, accelerated by the COVID-19 pandemic, which necessitated new operational approaches and business models (Yusra et al, 2021). Post-pandemic recovery has created evolving demands for workforce skills, with employers increasingly valuing adaptability, digital literacy, and problem-solving capabilities alongside traditional tourism knowledge (Oktadiana & Chon 2018). This evolution highlights the gap between academic graduates' theoretical understanding and the practical skills required by the industry (King et al., 2021).

Research by Suud et al, (2024) identified specific competency needs in Indonesia's tourism sector, including crisis management, digital marketing, sustainable tourism practices, and cross-cultural communication skills. Similarly, Suryasih et al (2022) found that industry stakeholders prioritize soft skills such as adaptability, teamwork, and communication alongside technical expertise. These findings align with global trends in tourism education, where the integration of transversal skills with domain-specific knowledge is increasingly emphasized (Watrianthos et al, 2022).

The gap between academic education and industry needs has been well-documented in tourism studies. Moreover, tourism graduates often possess strong theoretical knowledge but lack

practical skills and industry exposure, creating challenges in early career progression (Mahirda & Wahyuni, 2016; Triyono & Moses 2019; Aziz 2019). Conversely, Airey (2015) argued that purely vocational approaches may develop immediate skills but fail to foster the critical thinking needed for long-term career development. This tension underscores the importance of applied programs that effectively balance theoretical foundations with practical application.

Project-Based Learning (PBL) and Problem-Based Learning (PrBL) have emerged as pedagogical approaches that address this balance. PBL involves collaborative work on real-world projects, while PrBL focuses on solving authentic industry challenges through structured inquiry (Suud et al 2024). Both approaches have demonstrated effectiveness in tourism education by developing practical skills within theoretical frameworks (Duarte et al., 2018). The Matrappar-PNB program incorporates these approaches through industry-based projects and case studies that connect classroom learning with workplace application.

While applied education offers strong alignment with industry demands, several scholars have cautioned that excessive vocationalization can risk narrowing intellectual breadth and critical capacity (Airey, 2015; King et al., 2021). In Indonesia's context, applied programs may also face challenges in sustaining academic research productivity and theoretical inquiry (Tondang, 2024). The Matrappar-PNB program seeks to mitigate these risks by integrating reflective components and applied research requirements within its curriculum. This dual focus ensures that students not only master technical and managerial competencies but also cultivate analytical and ethical awareness key qualities for long-term professional resilience in tourism.

Government Policy as an Enabler of Applied Higher Education

Indonesian higher education policy has increasingly emphasized the development of vocational education, particularly through a series of regulations that establish frameworks for applied learning. Law No. 12 of 2012 provides the foundational legal basis for vocational higher education, while Ministerial Regulation No. 3/2020 outlines specific standards for applied learning outcomes (Ministry of Education and Culture, 2020). More recently, Ministerial Regulation No. 53/2023 has further strengthened the role of industry collaboration in vocational education, mandating partnerships between educational institutions and industry stakeholders (Ministry of Education, Culture, Research and Technology, 2023).

This policy framework does more than prescribe institutional standards; it actively shapes how polytechnics conceptualize and implement applied learning. The interaction between policy and practice is not linear but iterative: institutional leaders reinterpret national mandates through local strategies, adjusting curricula, resource allocation, and partnership modalities. This critical interplay between regulatory intent and institutional execution demonstrates how policy discourse translates—or occasionally fails to translate—into pedagogical outcomes. Such synthesis echoes Molek-Kozakowska and Geisler (2020), who argue that regulatory structures require interpretive flexibility to foster authentic innovation in higher education.

The concept of "industry-based learning" features prominently in these national policies, reflecting a shift toward more integrated approaches to vocational education. As Tondang, (2024) note, this represents a significant evolution from earlier models that maintained clearer boundaries between educational institutions and workplaces. The current policy framework envisions a more permeable relationship, with continuous knowledge exchange and collaborative curriculum development between academics and industry professionals.

The government's role in orchestrating vocational education frameworks extends beyond regulatory functions to include funding initiatives, quality assurance mechanisms, and strategic coordination between stakeholders (Directorate General of Higher Education, 2020). Nurmoko et al, (2024) describe this as a "triple helix" approach, where government agencies facilitate partnerships between educational institutions and industry partners to achieve mutual objectives. This approach is particularly evident in tourism education, where government agencies often serve as intermediaries between academic programs and tourism businesses.

Comparative studies with international vocational systems offer valuable insights for Indonesia's applied higher education development. The German dual education system, characterized by alternating periods of classroom instruction and workplace training, has been widely recognized for its effectiveness in developing industry-ready graduates (Dörffer & Bernhard, 2025). Similarly, South Korea's industry-education integration model has successfully aligned vocational curricula with rapidly changing industry needs (Choi et al, 2023). While these systems operate in different cultural and economic contexts, their emphasis on structured industry participation offers relevant lessons for Indonesia's tourism education development.

Program Management and Institutional Readiness

Organizational culture plays a crucial role in the success of applied master's programs, particularly in traditionally academic institutions transitioning toward more vocational approaches. Schein's (2017) model of organizational culture highlights the importance of alignment between espoused values (such as industry relevance) and underlying assumptions (including beliefs about knowledge and learning). In the context of tourism education, institutions must develop cultures that value practical application, industry knowledge, and work-integrated learning alongside academic rigor (Hendarman & Tjakraatmadja, 2012).

Effective collaboration between educational institutions and industry partners represents another critical factor in program success. Cooper and Shepherd (1997) identified several models of industry-academia collaboration in tourism education, ranging from advisory relationships to fully integrated partnerships. More recently, Booyens (2020) proposed a "knowledge co-creation" model, where industry and academic partners collaboratively develop curricula, learning materials, and assessment approaches. The Matrappar-PNB program exemplifies this approach through its industry advisory board, collaborative research projects, and shared teaching arrangements with industry professionals (Budiarsa, 2021).

Curriculum management represents a particularly important aspect of applied program development. Tribe (2002) proposed that tourism curricula should balance vocational, disciplinary, and liberal approaches to create graduates who are both technically competent and critically reflective. In applied programs, this balance often involves integrating industry certification standards, technical skills development, and reflective practice within a cohesive learning experience (Aziz, 2019). International collaborations can further enhance curriculum quality by introducing global perspectives and industry practices (Airey, 2015).

Communication strategies, including program promotion, stakeholder engagement, and alumni networks, also contribute significantly to program sustainability. Effective promotion helps attract qualified students and industry partners, while alumni engagement provides valuable feedback loops and industry connections (Wibowo et al, 2022). The Matrappar-PNB program

has utilized a range of communication approaches, including social media outreach, industry events, and alumni showcases, to build its reputation and sustain enrollment (Budiarsa, 2021).

Although numerous studies have explored vocational and tourism education in Indonesia (e.g., Ernawati & Pearce, 2003; Wibowo et al., 2022; Tondang, 2024), few have integrated the interrelationships between *industry demand*, *policy environment*, and *institutional management* in a single analytical framework. Most existing literature either examines policy reforms in isolation or evaluates graduate competencies without linking them to institutional practices. This study uniquely bridges these dimensions by triangulating empirical data from alumni, employers, government officials, and institutional administrators, thereby offering a comprehensive model for evaluating applied higher education effectiveness in tourism.

Synthesis and Conceptual Framework Development

The synthesis of literature across industry demands, government policy, and program management reveals complex interrelationships between these domains in shaping applied tourism education. Industry demands establish the competency requirements and performance expectations for graduates, while government policies create the regulatory framework and incentive structures for educational institutions. Program management mediates between these external forces and internal educational processes, translating industry needs and policy requirements into effective learning experiences (Rohendi et al, 2024).

This integrated perspective underpins the conceptual framework for this study, which posits that effective applied tourism education emerges from the alignment of three key constructs: industry demand, government policy, and program management.

The conceptual framework is based on the dynamic interplay between these three core constructs:

1. Industry Demand – drives graduate competency needs and curriculum relevance.
2. Government Policy – establishes the regulatory environment and incentives for applied education.
3. Program Management – translates external demands into institutional practices.

These constructs are interconnected and mutually reinforcing. Kolb's Experiential Learning Theory informs curriculum design and applied learning. Boyatzis' Competency-Based Education Framework informs skill measurement and development.

Each construct includes:

1. Industry Demand: Skills Alignment, Employer Expectations, Workforce Trends.
2. Government Policy: Curriculum Standards, Industry Link Mandates, Funding Support.
3. Program Management: Organizational Culture, Partnerships, Curriculum Implementation.

The framework underpins the design of survey variables and interview themes and is validated through triangulated data. Within the conceptual framework, organizational culture and communication strategies are operationalized to ensure measurable analysis and consistent interpretation.

1. Organizational Culture refers to the set of shared values and practices that support applied learning, measured through indicators such as frequency of faculty–industry

collaboration sessions, faculty participation in professional training, and leadership initiatives promoting applied research.

2. Communication Strategies encompass internal and external engagement mechanisms designed to enhance program visibility and stakeholder interaction. Key indicators include diversity of communication channels (digital, print, event-based), alumni engagement frequency, and employer feedback mechanisms.

These operational definitions enable a clearer linkage between institutional processes and educational outcomes, allowing both quantitative and qualitative assessment of how managerial culture and communication influence program effectiveness.

3. Methodology

The methodology for this research is grounded in a mixed-methods approach, integrating both quantitative and qualitative data to provide a comprehensive analysis of the applied master's program in tourism. This methodological approach aligns with Creswell and Plano Clark's (2018) convergent parallel design, where quantitative and qualitative data are collected concurrently, analyzed separately, and then integrated during interpretation to provide a more complete understanding of the research problem. Table 1 show the mapping table research objectives to data sources and methods.

Table 1. Mapping table of research objectives

| Research Objective | Data Source | Analysis Method |
|--|--|---------------------------------------|
| Evaluate alignment of curriculum with industry demands | Alumni & Employer Surveys | Descriptive & Factor Analysis |
| Assess government policy impact on program development | Policy Documents & Interviews with Officials | Thematic Analysis |
| Examine internal program management practices | Interviews with Faculty & Admin, Document Analysis | Thematic Analysis |
| Identify key graduate competencies | Alumni & Employer Surveys | Reliability Tests, Cross-tab Analysis |
| Develop a conceptual framework for applied tourism education | Literature Review & All Empirical Data | Synthesis and Visual Modelling |

Source: Author's research plan, (2024)

Table 1a. Mapping of Constructs and Survey Indicators

| Construct | Theoretical Source | Instrument/Variable | Key Indicators |
|------------------------|---|---|--|
| Experiential Learning | Kolb (1984) | PECP – Program Effectiveness & Curriculum Perceptions | Application of theory to practice; experiential project evaluation |
| Competency Development | Boyatzis (1982, 2008) | ACPS – Applied Critical Problem Solving | Problem-solving capacity; decision-making effectiveness |
| Industry Alignment | Boyatzis (1982); Cooper & Shepherd (1997) | ICTY – Industry Competency | Relevance of skills; industry satisfaction |
| Policy Implementation | Ministry Regulations (2020, 2023) | Policy Interview Themes | Alignment of regulation with institutional practices |

| | | | |
|--------------------|---------------|---|--|
| Program Management | Schein (2017) | Qualitative Data (Culture, Partnerships, Communication) | Leadership approach; partnership depth; communication strategies |
|--------------------|---------------|---|--|

Source: Author's design based on theoretical and empirical synthesis (2025).

Sampling and Data Collection

The total quantitative sample of 158 respondents (79 alumni and 79 employers) represents the entire population of Matrappar-PNB graduates and their corresponding employers between 2018–2023, fulfilling the criterion for population sampling in small program contexts. Following Creswell and Plano Clark (2018), this sample size provides sufficient statistical power for descriptive and factor analysis in mixed-methods studies. For the qualitative component, thematic saturation was reached after 26 interviews (faculty, administrators, government officials, and industry partners), as no new themes emerged beyond the 23rd interview. This combined rationale ensures representativeness, credibility, and adequate data triangulation despite the program's specialized scope.

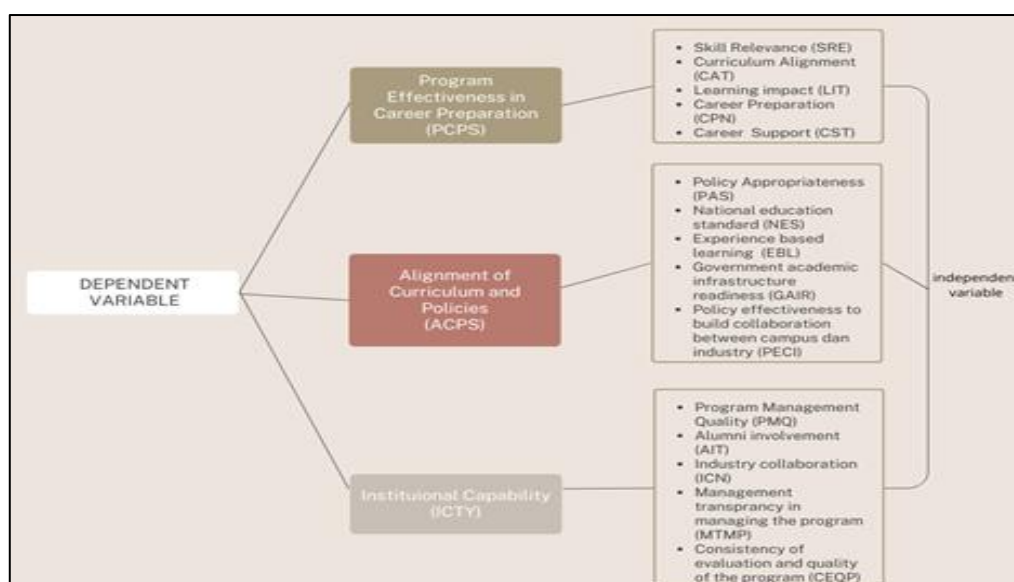


Figure 3. Alumni Variable

The alumni sample represented graduates from multiple cohorts (2018-2023), ensuring representation across program iterations. The alumni variables framework serves as the foundation for measuring graduate success and program effectiveness. It encompasses detailed metrics including employment rates, salary progression, job position levels, and skill utilization rates. This framework enables quantitative assessment of how graduates apply their education in real-world settings, tracking both immediate employment outcomes and long-term career development. The variables are structured to capture both objective measures (employment status, salary) and subjective assessments (satisfaction with education, perceived skill relevance).

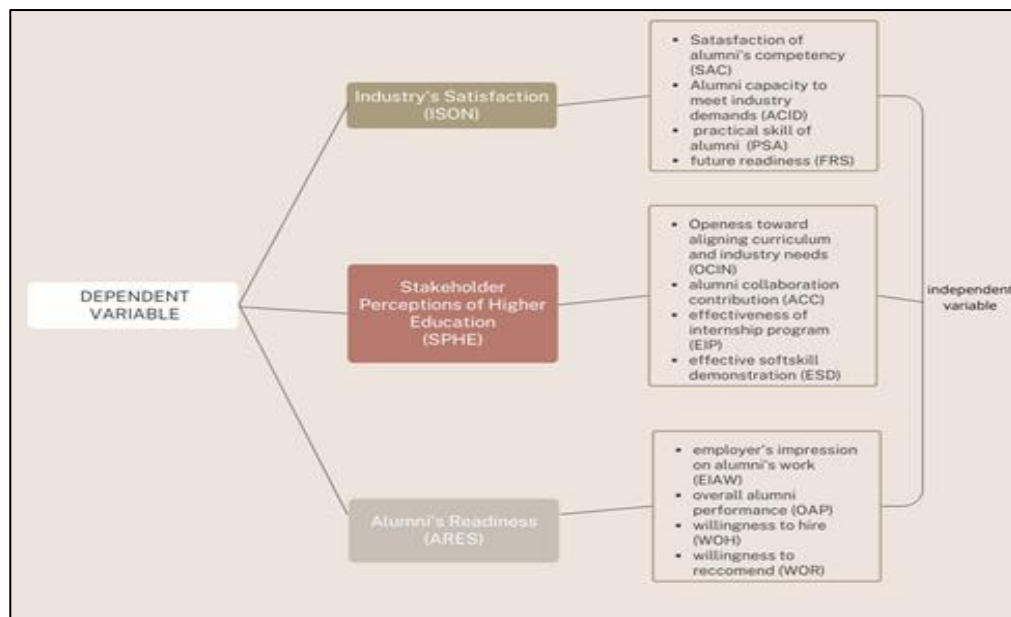


Figure 4. Employer Variable

The employer sample included organizations that had hired program graduates or provided internship opportunities, representing diverse segments of Bali's tourism industry including hotels, restaurants, attractions, tourism villages, and travel agencies. Moreover, The employer variables framework creates a comprehensive evaluation system from the industry perspective. It includes detailed assessment criteria for graduate performance, specific competency evaluations, and industry satisfaction metrics. These variables measure both technical skills and soft skills, allowing employers to evaluate graduates' readiness for industry demands. The framework includes indicators for workplace performance, adaptation capabilities, and professional growth potential, providing valuable feedback for program improvement.

Qualitative data were collected through semi-structured interviews with program administrators (n=5), faculty members (n=8), industry partners (n=10), and government officials (n=3). These interviews explored participants' experiences, perceptions, and recommendations regarding the program's development, implementation, and outcomes. Additionally, document analysis was conducted on program curricula, syllabi, assessment materials, and institutional policies to triangulate findings from the survey and interview data.

Measurement Tools

Quantitative data collection was guided by clearly defined constructs consistent with the theoretical framework outlined in the literature review. The alumni survey included three domains:

4. Program Effectiveness and Curriculum Perceptions (PECP) – reflecting Kolb's experiential learning through measures of applied curriculum quality and real-world project integration;
5. Applied Critical Problem Solving (ACPS) – corresponding to Boyatzis's cognitive and functional competencies;
6. Industry Competency (ICTY) – representing the alignment between program outcomes and employer expectations.

The employer survey included three corresponding domains: Industry Skills and Organizational Needs (ISON), Specific Professional and Hospitality Education (SPHE), and Applied Research and Employment Skills (ARES). These domains mirror the constructs of the conceptual framework and maintain terminological consistency between theoretical underpinnings and measurement tools.

The development of these measurement tools was informed by the theoretical constructs discussed in the literature review, particularly Kolb's (1984) Experiential Learning Theory and Boyatzis' (1982) Competency-Based Education framework. Survey items were pilot-tested with a small sample of alumni and employers (n=10 each) to ensure clarity, relevance, and comprehensiveness. Reliability analysis using Cronbach's alpha confirmed internal consistency for all scales ($\alpha > 0.75$).

Qualitative data collection employed semi-structured interview protocols designed to explore participants' perspectives on the three key themes: industry demand, government policy, and program management. Interview questions were developed based on the conceptual framework and adapted for each stakeholder group to reflect their specific knowledge and experience. Document analysis was guided by a structured protocol focusing on curriculum design, learning outcomes, assessment approaches, and industry integration.

The development of the alumni and employer survey instruments underwent a multi-stage validation process. Content validity was established through expert review by three academic specialists in vocational education and two senior tourism industry practitioners. Construct validity was verified through exploratory factor analysis (see Results section), with all factor loadings above 0.60. Reliability testing produced Cronbach's alpha values above 0.75 for all subscales, indicating strong internal consistency. Pilot testing with 20 respondents (10 alumni, 10 employers) ensured clarity and contextual relevance of questionnaire items before full deployment.

Analysis Method

Quantitative data analysis began with descriptive statistics to understand response patterns and central tendencies. Measures of central tendency (mean, median, mode) were calculated for each variable, along with frequency distributions to identify response patterns. Inferential statistical analyses included chi-square tests to examine relationships between categorical variables and factor analysis to identify underlying competency clusters. Reliability testing using Cronbach's alpha ensured the internal consistency of measurement scales.

Qualitative data were analyzed using thematic analysis following Braun and Clarke's (2006) six-step process: familiarization with data, generating initial codes, searching for themes, reviewing themes, defining themes, and producing the report. To manage and visualize data, Orange (Demšar et al., 2013) and Xmind (Mammen & Mammen, 2018) software tools were employed. Orange facilitated flexible, component-based qualitative data analysis, while Xmind supported the development of mind maps for identifying thematic relationships. To conclude, figure 5 is the research framework process.

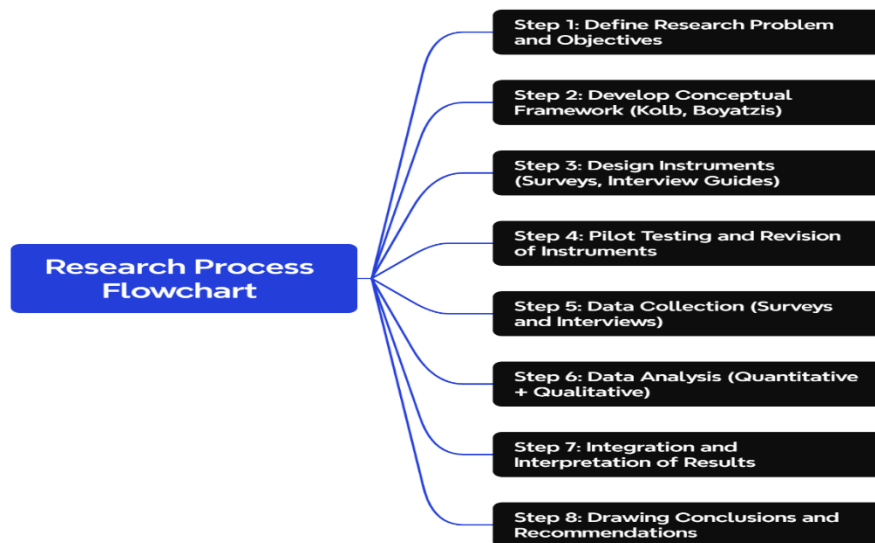


Figure 5. Research process flowchart
Source: Author's research flowchart process (2024)

Integration and Triangulation of Data

Integration of qualitative and quantitative findings followed a convergent parallel design (Creswell & Plano Clark, 2018). After independent analyses, results from surveys and interviews were compared in a triangulation matrix to identify convergence, complementarity, and divergence.

1. Convergence occurred where alumni and employer quantitative data confirmed similar competency strengths such as problem-solving and leadership).
2. Complementarity emerged when qualitative interviews provided contextual explanations for quantitative trends such as policy support enabling program growth).
3. Divergence was noted in innovation and entrepreneurship competencies, where employers expressed higher expectations than alumni self-ratings.

This process ensured that interpretation was grounded in multiple evidence sources, strengthening internal validity and providing a nuanced understanding of how institutional, industry, and policy factors interact.

4. Results

Industry demand: An objective needs of the tourism industry

Applied higher education and the business world, including industry and the workforce, are intrinsically linked. Applied higher education exists to meet the real needs of these sectors. Like vocational schools, such an education in Indonesia is designed to fulfil industry demands.

In the history of Bali's tourism development, the 1980s marked the development stage in the tourism area life-cycle theory (Butler, 2006). During this period, tourism in Bali began to flourish, with Kuta, Sanur, and Ubud emerging as major tourist centres (Anom et al., 2017). The tourism industry of the New Order era required skilled, work-ready human resources with

diploma-level qualifications (D1, D2, and D3). Following the bombings in 2002 and 2005 (Putra & Hitchcock, 2006; Putra & Hitchcock, 2009), there was an increasing demand for applied bachelor's degrees and Diploma 4 qualifications. Since the 2010s, the need for master's degree graduates in tourism has become apparent, particularly for academic staff in universities.

According to Law Number 14 of 2005 concerning Teachers and Lecturers, every lecturer is required to have a Master Degree qualification. Entering the 2020s, especially as the negative impacts of the Covid-19 pandemic began to subside, there has been a significant demand for applied master's degrees in tourism. This demand is driven by Bali's status as a premier international destination and the evolving needs of the tourism industry. The industry's recovery and growth underscore the importance of advanced qualifications to meet both academic and practical requirements in this vital sector.

In the tourism industry, Indonesia saw substantial foreign tourist arrivals before the Covid-19 pandemic, driven by effective government and private sector efforts in promotion, marketing, and service delivery. Foreign tourist visits increased consistently: 10,2 million in 2015; 11,5 million in 2016; 14 million in 2017; 15,8 million in 2018; and 16,1 million in 2019 (BPS, 2021). This upward trend was particularly pronounced in Bali, which has long been a leading and pioneering tourist destination in Indonesia. The global pandemic severely disrupted international travel, drastically reducing tourist arrivals and impacting the local economy. However, as travel restrictions eased and vaccination campaigns progressed.

The empirical data situates the Matrapar-PNB program within the larger context of Indonesia's tourism sector, which contributes 6.2% to the national GDP and employs over 13 million individuals (WTTC, 2023). Bali, as Indonesia's premier tourism destination, has demonstrated remarkable resilience, with international tourist arrivals rebounding from 51 in 2021 to over 5.2 million in 2023 (BPS, 2024). This resurgence amplifies the need for skilled professionals who can navigate the complexities of a recovering and rapidly evolving industry.

The program's emphasis on experiential learning, industry internships, and green tourism aligns with these economic dynamics, equipping graduates to address current challenges and contribute to sustainable growth. For instance, the integration of sustainability into the curriculum reflects both local policy goals and international best practices in tourism development (Manurung, 2014).

Contemporarily, a total of 79 students had graduated from Matrapar-PNB (State Polytechnic of Bali, 2024). These graduates were dispersed across various regions in Indonesia, with some working internationally. However, the majority were employed within Bali's tourism industry. A survey was conducted to assess the perceptions of various stakeholders regarding the importance of higher education in tourism. The survey included responses from Matrapar-PNB graduates employed in the tourism sector, and managers overseeing these graduates. The 79 questionnaires distributed to the graduates were returned and deemed valid. This high response rate (100%) provided a solid foundation for analysing the participants' views, particularly concerning career development and talent enhancement through advanced education programs such as the Magister Terapan Pariwisata. Table 2 show the demographic of alumni.

Table 2. Demographic of Alumni

| No. | Characteristic | Number of respondents (N= 79) | Percentage |
|-----|----------------|----------------------------------|------------|
| | | | (%) |
| 1 | Gender | | |
| | Men | 48 | 60.76 |
| | Women | 31 | 39.24 |
| 2 | Age | | |
| | <30 years old | 35 | 44.30 |
| | >40 years old | 44 | 55.70 |

Source: Survey (2024)

The alumni demographics (Table 2) illustrate the program's appeal to a diverse age range, with 55.70% of alumni above 40 years old and 44.30% below 30 years old. This age distribution signifies the program's ability to attract mid-career professionals seeking to enhance their skills and younger individuals aiming for early career advancement. The high representation of older students aligns with findings in vocational education, which suggest that mature learners are drawn to applied programs due to their emphasis on industry-oriented outcomes (Duarte et al, 2018; Wibowo et al, 2022).

Table 3. Descriptive Statistic of Alumni's Response

| DV | IV | VL (1) | L (2) | M (3) | H (4) | VH (5) | Avg | Med | Mod |
|------|------|-----------|----------|----------|----------|-----------|------|-----|-----|
| PECP | SRE | 3% | 6% | 23% | 43% | 25% | 3.82 | 4 | 4 |
| | CAT | 1% | 4% | 25% | 48% | 22% | 3.84 | 4 | 4 |
| | LIT | 0% | 5% | 30% | 47% | 18% | 3.77 | 14 | 4 |
| | CPN | 3% | 8% | 27% | 42% | 22% | 3.72 | 4 | 4 |
| | CST | 1% | 8% | 28% | 43% | 20% | 3.73 | 16 | 4 |
| ACPS | PAS | 1% | 6% | 30% | 42% | 20% | 3.73 | 16 | 4 |
| | NES | 0% | 4% | 25% | 48% | 23% | 3.72 | 4 | 4 |
| | EBL | 1% | 5% | 23% | 48% | 23% | 3.73 | 4 | 4 |
| | GAIR | 3% | 8% | 28% | 38% | 24% | 3.73 | 19 | 4 |
| | PECI | 1% | 9% | 27% | 42% | 22% | 3.73 | 4 | 4 |
| ICTY | PMQ | 3% | 5% | 29% | 46% | 18% | 3.70 | 14 | 4 |
| | AIC | 13% | 24% | 34% | 22% | 8% | 2.87 | 4 | 4 |
| | ICN | 3% | 6% | 33% | 43% | 15% | 3.01 | 12 | 4 |
| | MTMP | 4% | 9% | 27% | 39% | 22% | 3.65 | 4 | 4 |
| | CEQP | 3% | 6% | 24% | 46% | 22% | 3.77 | 4 | 4 |

Source: Data analysis, (2024)

The Matrappar-PNB program's effectiveness in aligning its curriculum with industry needs is evident from alumni feedback, which highlights high satisfaction with program effectiveness (PECP) and curriculum alignment (CAT), both scoring averages around 3.82–3.84. Additionally, variables such as Leadership in Tourism (LIT) and Applied Critical Problem Solving (ACPS) were rated highly, with averages around 3.73. These results underscore the program's success in fostering critical skills like leadership and problem-solving, essential for navigating the complexities of the tourism sector.

The use of applied learning methods, including project-based and problem-based learning, has significantly contributed to these outcomes. These pedagogical approaches emphasize real-world application, encouraging students to engage actively with industry-relevant challenges and solutions. Kolb's Experiential Learning Theory (1984) supports this approach, positing that knowledge is effectively acquired through the transformation of experiences, which is central to the Matrappar-PNB curriculum. Moreover, Boyatzis' (1982) competency-based education framework aligns with the program's focus, as it prioritizes the development of specific skills demanded by the tourism industry.

This practical orientation not only enhances students' capabilities but also aligns with global trends emphasizing workforce-ready education tailored to dynamic industries like tourism. Consequently, the program emerges as a model of applied education that successfully bridges academic learning with industry demands, preparing graduates to excel in professional roles while addressing the evolving needs of the tourism sector.

To verify the internal structure of the alumni and employer instruments, exploratory factor analysis (EFA) using Principal Component Analysis with Varimax rotation was conducted. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded a value of 0.81, exceeding the minimum threshold of 0.6, and Bartlett's Test of Sphericity was significant ($p < 0.001$), confirming suitability for factor analysis.

The analysis extracted three dominant factors corresponding to the theoretical domains derived from Kolb (1984) and Boyatzis (1982):

1. Applied Learning Competence (ALC) – capturing items related to experiential learning and curriculum effectiveness (variance explained: 28.4%);
2. Problem-Solving and Leadership (PSL) – encompassing critical reasoning, teamwork, and decision-making (variance explained: 22.1%); and
3. Industry Readiness and Professionalism (IRP) – reflecting practical competency and employability (variance explained: 16.9%).

Collectively, these factors explained 67.4% of total variance, indicating a robust alignment between theoretical constructs and empirical data. The results validate the instrument's structural coherence and reinforce the conceptual linkage between learning theories and applied education outcomes.

Industry insight: a response towards program objective to aligned the alumni with industry needs

The analysis of employer data revealed strong alignment between the Matrappar-PNB program and industry needs. Employers consistently rated graduates highly across key competency areas, particularly in problem-solving abilities (mean=3.79) and work-oriented results (mean=3.82). These findings suggest that the program's emphasis on applied learning methods effectively develops the practical skills valued by tourism employers. As one hotel manager remarked during interviews:

"Graduates from this program bring a different perspective compared to traditional academic degrees. They understand operational realities and can immediately apply theoretical knowledge to solve real problems in our business." (Industry Partner 3)

Table 4. Demographic of Employer

| No | Industry sector | Number of employer | % |
|-------|----------------------|--------------------|------|
| 1 | Hospitality industry | 55 | 69.9 |
| 2 | Tourism village | 21 | 26.6 |
| 3 | Self owned business | 3 | 3.8 |
| Total | | 79 | 100 |

Source: Survey (2024)

Employer demographics (Table 4) reveal a strong representation from the hospitality sector (69.9%), followed by tourism villages (26.6%) and self-owned businesses (3.8%). This reflects Bali's reliance on hospitality as the cornerstone of its tourism economy (BPS, 2024). The program's focus on hospitality management aligns with this trend, ensuring that graduates are equipped to contribute to the sector's operational excellence.

Notably, the presence of employers from tourism villages underscores the program's relevance to community-based tourism, a critical component of Bali's sustainable development strategy. By emphasizing sustainability in its curriculum, such as through the "Green Tourism Feasibility Study" course, the program aligns with global trends toward eco-friendly tourism practices (Elkington, 2013).

Qualitative data from interviews revealed specific industry demands that drive recruitment preferences. Industry partners consistently emphasized the need for graduates with integrated competencies spanning technical knowledge, problem-solving abilities, and interpersonal skills. As one resort director explained:

"We're not looking for specialists alone anymore. The industry needs versatile professionals who understand business operations holistically, can analyze data effectively, and communicate solutions persuasively. The applied approach seems to develop this integration better than purely theoretical programs." (Industry Partner 7)

The post-pandemic context has intensified certain skills demands, particularly in crisis management, digital marketing, and sustainable tourism operations. Document analysis of industry partnership records showed an increasing emphasis on these areas in collaborative projects and internship placements between 2021-2023, indicating the program's responsiveness to evolving industry needs.

Table 5. Descriptive Statistic of Employer's Response

| DV | IV | VL (1) | L (2) | M (3) | H (4) | VH (5) | Avg | Med | Mod |
|------|------|-----------|----------|----------|----------|-----------|------|-----|-----|
| ISON | SAC | 4% | 9% | 25% | 44% | 18% | 3.63 | 14 | 4 |
| | ACID | 3% | 6% | 29% | 46% | 16% | 3.67 | 13 | 4 |
| | PSA | 4% | 8% | 23% | 49% | 16% | 3.79 | 13 | 4 |
| | FRIS | 3% | 8% | 27% | 42% | 22% | 3.72 | 4 | 4 |
| SPHE | OCIN | 0% | 0% | 29% | 30% | 27% | 3.41 | 21 | 4 |
| | ACC | 1% | 8% | 25% | 48% | 18% | 3.73 | 14 | 4 |
| | EIP | 4% | 9% | 24% | 46% | 18% | 3.64 | 14 | 4 |
| | ESD | 3% | 8% | 28% | 38% | 24% | 3.73 | 19 | 4 |
| ARES | EIAW | 4% | 6% | 28% | 47% | 15% | 3.63 | 12 | 4 |
| | OAP | 3% | 8% | 23% | 48% | 19% | 3.73 | 15 | 4 |
| | WOH | 0% | 0% | 32% | 46% | 23% | 3.91 | 4 | 4 |
| | WOR | 0% | 0% | 39% | 39% | 22% | 3.82 | 17 | 4 |

Source: Data Analysis, (2024)

However, the data of employer's response towards the program's success in preparing graduates to meet industry demands (table 5) also revealed some competency gaps, particularly in entrepreneurial innovation. The Entrepreneurial Innovation Practice (EIP) variable received relatively lower ratings (mean=3.64) compared to other competencies, suggesting an opportunity to strengthen this aspect of the curriculum. This finding aligns with global tourism trends emphasizing innovation as a key driver of post-pandemic recovery and resilience (Lambert et al, 2020). Employer responses (Table 5) strongly affirm the program's success in preparing graduates to meet industry demands. High ratings in problem-solving abilities (3.79) and work-oriented results (3.82) reflect the effectiveness of applied learning methods like project-based and problem-based learning. This pedagogical approach, which integrates real-world scenarios into the curriculum, has been widely recognized for enhancing critical thinking and professional competencies (Kolb, 1984; Boyatzis, 1982).

However, slightly lower ratings for innovation management (3.64) suggest an opportunity to strengthen entrepreneurial skills within the curriculum. Research highlights the increasing need for innovation in tourism, particularly in a post-pandemic context where resilience and adaptability are crucial (King et al., 2021). Incorporating advanced modules on entrepreneurship, supported by industry collaborations, could address this gap and prepare graduates for leadership in emerging tourism sectors.

Government Policy: Orchestrating the Construction of Applied Higher Education to Direct the Sustainability of Industry-Based Learning Processes

Analysis of policy documents and interview data revealed how government regulations have enabled the development and implementation of applied tourism education in Indonesia. The regulatory framework established by Law No. 12/2012, Ministerial Regulation No. 3/2020, and Ministerial Regulation No. 53/2023 has created a supportive environment for applied programs by legitimizing industry-based learning approaches, establishing quality standards, and mandating industry partnerships.

Interview participants from both the institution and government agencies emphasized the importance of these policies in facilitating program development. As one government official stated:

"The regulatory framework now explicitly recognizes applied master's degrees as distinct from research-oriented programs. This recognition allows institutions to develop innovative curricula that integrate workplace learning without being constrained by traditional academic models." (Government Official 2)

The concept of "industry-based learning" emerged as a central policy directive that has directly influenced the Matrapar-PNB program design. Document analysis revealed direct alignment between policy requirements for industry collaboration and the program's implementation of industry advisory boards, practitioner teaching appointments, and collaborative research projects. This alignment demonstrates how policy mechanisms have successfully translated into institutional practices.

Comparative analysis with international vocational systems highlighted both similarities and differences with Indonesia's approach. While Indonesia has adopted elements of German and

Korean models, interview data suggested that implementation remains challenged by cultural factors and resource limitations. As one program administrator noted:

"We've studied international best practices, but we need to adapt these models to our cultural context. The Indonesian approach emphasizes relationship-building and consensus more than contractual obligations, which affects how industry-academia partnerships function in practice." (Program Administrator 1)

Despite supportive policies, stakeholders identified several implementation challenges. These included bureaucratic processes that sometimes impede responsive curriculum changes, funding mechanisms that don't fully accommodate applied learning costs, and assessment frameworks that don't adequately capture applied competencies. These challenges point to areas where policy refinement could further strengthen applied education outcomes.

Program Management: State Polytechnic of Bali's Role Through Organizational Culture, External Cooperation, and Mass Communication

The successful implementation of the Matrappar-PNB program can be attributed to several key management factors at the institutional level. Analysis of quantitative and qualitative data revealed three primary dimensions of program management that have contributed to positive outcomes: organizational culture, external partnerships, and strategic communication.

Organizational culture emerged as a foundational element of program success. Document analysis of institutional policies and interview data from faculty members revealed a gradual cultural shift within the institution toward greater valuation of applied learning approaches and industry knowledge. This shift was facilitated by leadership commitment, professional development for faculty, and revision of promotion criteria to recognize industry engagement alongside traditional academic achievements. As one faculty member explained:

"Initially, there was resistance to the applied model because many of us were trained in traditional academic approaches. The institutional leadership invested in changing mindsets through workshops, industry exposure, and developing new metrics for evaluating teaching excellence that recognize practical expertise." (Faculty Member 4)

In the realm of higher education, the cultivation of a robust organisational culture is paramount, often delineated by three core facets: leadership style, normative structures, and communicative efficacy (Molek-Kozakowska & Geisler, 2020). At Matrappar-PNB, these creeds find tangible expression through the leadership acumen of the program coordinator, adeptly balancing authority with accountability in fostering a culture of fairness and equity among the program's stakeholders. Furthermore, a harmonious blend of formal and informal norms underscores the cohesive teamwork exhibited by lecturers, educational staff, and students alike, fostering a conducive environment for collaborative problem-solving and dialogue, both within and beyond the confines of the campus setting. Indeed, the program's ethos is further reinforced by a culture of robust communication and teamwork, exemplified by regular face-to-face and online discussions convened to address pertinent program-related challenges.

Matrappar-PNB has established itself as a leader in tourism and vocational education through its comprehensive collaborative model that bridges academia and industry. The program features international partnerships with dual degree options between Bali and China, fast-track master's programs with Malaysia, and robust faculty development initiatives including lecturer

exchanges and joint research. Strong industry integration is evident through their relationship with The Apurva Kempinski Bali and guidance from a Professional Advisory Council comprising tourism sector leaders. Their alumni organization (MatraFam) boasts graduates working across Indonesia and internationally, with some achieving management positions. The program utilizes strategic digital communication to engage prospective students from Generations Y and Z while employing a student-centered approach that accommodates the diverse backgrounds of students from across Indonesia. This holistic approach balances academic excellence with industry relevance and global exposure.

An intrinsic strength of this study program lies in its robust collaboration with the tourism industry, a symbiotic relationship nurtured through the ongoing industry-based learning ethos. This symbiosis is a natural outgrowth of State Polytechnic of Bali's vocational orientation and student-centred learning, necessitating substantive and systematic engagement with external stakeholders. Notably, State Polytechnic of Bali boasts an extensive network of 344 collaborations encompassing the realms of business, industry, academia, and related institutions at local, national, and global echelons (State Polytechnic of Bali 2024). The selected 10 partner institutions from PNB are notably significant for the development of applied master degree program in tourism business planning and should be listed as key representatives as follows (Table 6).

Table 6. Key partnership of PNB

| No. | Name of institution | Area of collaboration | Example of successful cooperation |
|-----|---|--|---|
| 1 | University of Angers, France | Dual degree program, student exchange, lecturer exchange, cultural exchange, joint research, community service | Joint development of Matrapar-PNB student to pursue their dual degree program on 2021 (2 graduates), 2022 (1 graduates) 2023 (1 graduates) |
| 2 | Ecole Des Ingenieursde La Ville De Paris (EIVP), France | Student exchange, lecturer exchange, cultural exchange, joint research, community service | Lecturer exchange program and joint research and online teaching training. |
| 3 | OST Eastern Switzerland University of Applied Sciences, Switzerland | Student exchange, lecturer exchange, cultural exchange, joint research, community service | Lecturer exchange program and joint research and online teaching training. |
| 4 | Nanchang Normal University, China | Dual degree program, student exchange, lecturer exchange, cultural exchange, joint research, community service | Lecturer exchange program and joint research and online teaching training. Moreover, the cooperation of dual degree program 1 year in China and 1 year in Bali successfully executed. |
| 5 | Management and Science University (MSU), Malaysia | Dual degree program, student exchange, lecturer exchange, cultural exchange, joint research, community service | Joint development of fast-track master degree in Malaysia for 1 year after 1 year in Indonesia. |
| 6 | The Apurva Kempinski Bali | Industrial class, on the job training/internship, joint laboratory | Joint enrichment program for Matrapar-PNB through industrial class where the lecture are held in the Apurva Kempinski Bali, moreover the Matrapar-PNB |

| | | | |
|----|--|---|--|
| | | | student got priority list to complete their on the job training at The Apurva Kempinski Bali. |
| 7 | The St. Regis Bali Resort | Industrial class, on the job training/internship, joint laboratory | Industrial board expert that help led strategic decision to align the curriculum of Bali state polytechnic with the industry |
| 8 | Trip.Com | On the job training/internship, joint laboratory, industrial practitioner | Industrial lecturer to support Matrappar-PNB learning process, mainly in the Globalisation and Digital Marketing in Tourism subject. |
| 9 | PT. Melali MICE | On the job training/internship, joint laboratory, industrial practitioner | Industrial lecturer, expert judgement for Matrappar-PNB strategic decision making regarding curriculum and learning process |
| 10 | Badan Pelaksana Otoritas Labuan Bajo Flores (BPOLBF) | On the job training/internship, joint laboratory, industrial practitioner, joint research | Joint research on matching fund by Directorate General of Vocational, Minister of Education, Culture, Research and Higher Education of Republic Indonesia. |

Source: State Polytechnic of Bali, 2024.

External partnerships represented another critical success factor. The program has established collaborative relationships with 10 keys industry partners ranging from international hotel chains to local tourism enterprises. Document analysis revealed structured partnership frameworks that specify roles, responsibilities, and benefits for both parties. These partnerships facilitate guest lectures, site visits, internship placements, and collaborative research projects. Notably, 28% of course content is delivered by industry practitioners, exceeding the 25% minimum specified in government regulations.

Strategic communication targeting specific market segments has supported program sustainability and growth. Analysis of marketing materials and enrollment data showed targeted messaging to three primary segments: early-career professionals seeking advancement, mid-career professionals transitioning to tourism from other sectors, and industry employees seeking academic credentials to complement practical experience. This segmented approach has maintained consistent enrollment despite economic challenges in the tourism sector. As one administrator noted:

"We've been strategic in our communication, emphasizing different program benefits to different audience segments. For early-career professionals, we highlight career advancement; for career-changers, we emphasize practical skill development; and for experienced professionals, we focus on credentialing and theoretical foundations."
(Program Administrator 3)

The integration of these management dimensions has created a self-reinforcing cycle where cultural changes support partnership development, partnerships enhance communication effectiveness, and successful outcomes reinforce cultural commitment to applied education approaches. This integrated management approach appears to be a distinctive feature of the Matrappar-PNB program compared to other tourism education offerings in the region.

5. Discussion and Conclusion

This study evaluated the effectiveness of the Matrappar-PNB program through the interconnected lenses of industry alignment, government policy, and institutional management. The findings highlight the multifaceted role of applied pedagogies and vocational frameworks in enhancing graduate employability, institutional agility, and policy responsiveness.

First, the strong alignment between curriculum and labor market expectations underscores the relevance of experiential and competency-based pedagogies. Alumni and employer feedback confirmed that project-based learning, internships, and applied research foster critical problem-solving and leadership skills. These innovations, grounded in Kolb's experiential learning and Boyatzis' competency framework, validate the program as a forward-looking model for vocational education.

Second, Indonesia's policy landscape has been instrumental in legitimizing applied master's education. Reforms have established industry-university collaboration as a cornerstone of vocational learning. Nevertheless, ongoing challenges particularly in funding mechanisms and quality assurance systems highlight the need for continuous refinement to ensure scalable and sustainable program delivery.

Third, the Matrappar-PNB program exemplifies institutional readiness to implement and sustain applied education. A supportive organizational culture, robust external partnerships, and targeted communication strategies demonstrate how polytechnics can function as agents of innovation in the higher education system. This institutional model resonates with global best practices emphasizing autonomy, adaptability, and stakeholder engagement. Figure 6 visualized the connected through Kolb's Experiential Learning Theory and Boyatzis' Competency-Based Framework, both of which anchor applied learning strategies.

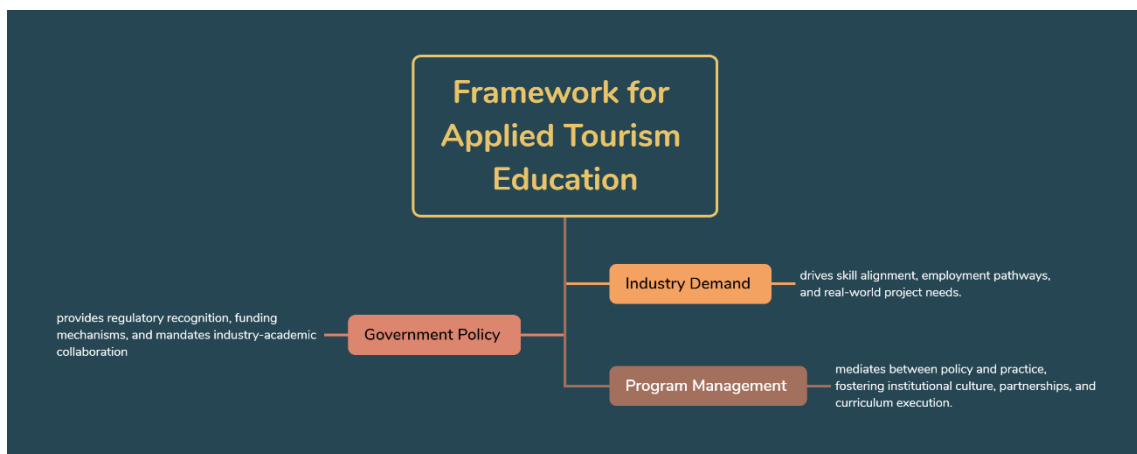


Figure 6. Concept map
Source: Author design using Xmind, (2024)

Figure 6 highlighted how policies influence institutional readiness and curriculum scope, how industry needs feed into curriculum content and student outcomes, and how program management ensures sustainable application of pedagogy and strategic planning. Together, these elements form a coherent and cyclical model for applied higher education in tourism, reinforcing feedback loops between education, policy, and industry. The study contributes a transferable conceptual framework linking pedagogy, policy, and

practice. This triadic structure industry demand, government policy, and program management can inform the development and evaluation of applied education programs across disciplines and national contexts.

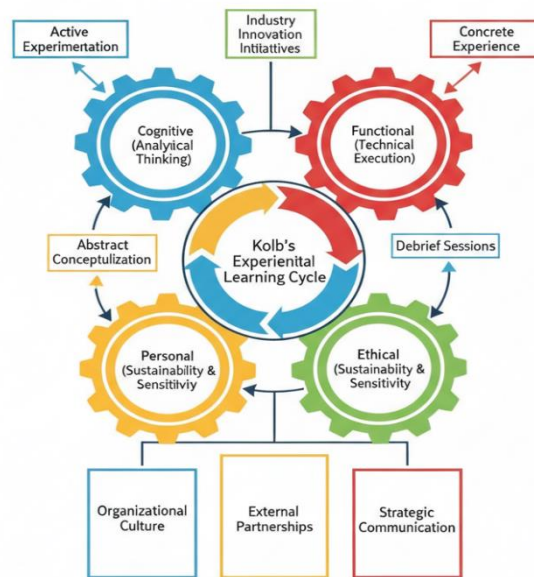


Figure 6a. Integration of Learning Theories and Program Management Constructs
Source: Author's Design, (2025)

Figure 6a represents as a extended conceptual map illustrates how Kolb's experiential cycle aligns with specific management practices and how Boyatzis's competency clusters correspond to measurable program outcomes. Table 7 highlighted the key findings and stakeholder implications:

Table 7. Key findings and stakeholder implications

| Key Findings | Stakeholders | Implications |
|--|--|---|
| Curriculum aligned with industry needs | Educational Institutions | Enhance project-based learning and competency-based curricula. |
| Applied learning fosters critical skills (problem-solving, leadership) | Students & Alumni | Gain skills relevant to tourism industry demands and leadership roles. |
| Policy support enables vocational program development | Government Agencies | Expand and streamline policy frameworks and funding for applied education. |
| Gaps in innovation and entrepreneurship | Curriculum Designers & Industry Partners | Integrate entrepreneurship modules and startup collaboration opportunities. |
| Strong institutional partnerships and communication strategies | Polytechnic Management | Sustain stakeholder engagement through segmented communication and strategic alliances. |
| Program responsiveness to tourism sector trends | Industry Partners | Deepen involvement in curriculum co-design, mentoring, and work placements. |

Source: Research findings, (2024)

The best practice of Matrappar-PNB program reflects the transformative potential of applied higher education when pedagogical innovation is reinforced by coherent policy frameworks and institutional leadership. Beyond tourism, the insights from this study are applicable to

broader efforts aimed at modernizing higher education systems, particularly in Southeast Asia and other regions seeking to align education with economic development, social equity, and technological advancement.

The triangulated findings revealed strong convergence between quantitative and qualitative data, particularly in the domains of problem-solving and leadership skills, where both alumni self-assessments and employer evaluations indicated high competency levels. Qualitative interviews reinforced these results by providing deeper insight into the mechanisms driving such competencies namely, the program's emphasis on experiential learning and real-world project assignments.

However, partial divergence was identified in the area of entrepreneurial innovation, where employers rated graduates slightly lower than alumni self-assessments. This suggests that while the curriculum effectively builds applied operational skills, there remains a developmental gap in fostering innovation-oriented mindsets. The qualitative data extended this observation, as industry stakeholders emphasized the growing need for intrapreneurial capacities and creative problem-solving in post-pandemic tourism. This triangulated interpretation underscores the importance of continuous feedback between academia and industry to sustain curriculum relevance.

Comparative Perspective within ASEAN Context

When compared to similar initiatives across ASEAN, the Matrapar-PNB program demonstrates both convergence and contextual distinction. Malaysia's Management and Science University (MSU) adopts a dual-degree model that integrates entrepreneurship incubation into tourism education, while Thailand's Rajamangala University of Technology emphasizes cooperative education models that embed students in industry settings for extended placements. These examples reveal that Indonesia's applied master's approach aligns with regional trends emphasizing employability and innovation, but its distinct strength lies in policy-driven institutional integration and strong cultural contextualization. Future regional collaborations could explore joint curriculum development and benchmarking mechanisms to promote standardization and mutual recognition of applied master's qualifications across Southeast Asia (Park, 2018; Pretti & McRae, 2021).

The findings contribute to broader discourses on balancing academic and applied tracks in Southeast Asian higher education systems. As Wibowo et al. (2022) and Choi et al. (2023) note, regional education reforms increasingly favor dual or hybrid pathways that blend theoretical research with vocational application. The Matrapar-PNB model exemplifies this evolution by demonstrating that applied master's programs can maintain academic rigor while enhancing direct industry responsiveness. This balance challenges outdated dichotomies between "academic" and "vocational" higher education, showing that a synergy of the two yields graduates equipped for complex, innovation-driven economies.

Study Limitations

While this study provides valuable insights into the interaction between policy, industry, and institutional management in applied higher education, several limitations must be acknowledged. The use of purposive sampling restricts the generalizability of findings beyond the State Polytechnic of Bali context. As a single-case study situated in one of Indonesia's leading tourism regions, results may not fully represent other institutional or regional

conditions. Additionally, the quantitative data relied on self-reported perceptions from alumni and employers, which may be subject to response bias. Future studies employing longitudinal or multi-institutional samples could enhance generalisability and causal inference.

Beyond sampling and scope constraints, the study's methodological limitations include reliance on self-reported perceptions, which may introduce social desirability bias, and the absence of longitudinal tracking of alumni outcomes over time. The cross-sectional nature of the data limits causal interpretation of relationships between variables. Additionally, while the mixed-methods approach enhances depth, the qualitative data were drawn primarily from institutional and local industry representatives, which may not fully capture perspectives from national tourism policymakers or smaller enterprises. Recognizing these limitations underscores the need for expanded datasets and cross-sector collaboration in future research.

Cultural and Ethical Consideration

This study's implementation within the unique cultural context of Bali's tourism sector necessitates careful consideration of several ethical and cultural dimensions. The research adhered to principles of informed consent throughout data collection, ensuring that all 79 alumni, 79 employers, and key stakeholders participating in interviews were fully aware of the study's purpose, methodology, and their rights as participants.

The Balinese cultural context presents both opportunities and challenges for tourism education. Bali's rich Hindu-Balinese cultural heritage serves as both a cornerstone of its tourism appeal and a critical factor that must be preserved and respected in tourism business practices. The applied master's program at Matrappar-PNB operates within this delicate balance, where tourism development must be sustainable and culturally sensitive. This cultural dimension influences curriculum design, as graduates must be equipped not only with business acumen but also with deep understanding of local customs, religious practices, and community values.

Ethical considerations in tourism education extend beyond traditional academic ethics to encompass responsible tourism practices. The program's emphasis on industry-based learning must ensure that students understand their role as stewards of Balinese culture and environment. This includes developing competencies in managing overtourism, preserving cultural authenticity, and ensuring that tourism benefits are equitably distributed among local communities.

The study's findings regarding strong industry alignment and government policy support must be viewed through the lens of sustainable development goals, where economic growth in tourism is balanced with cultural preservation and environmental protection. Future research should explore how cultural sensitivity and ethical tourism practices are integrated into applied learning outcomes and assessment mechanisms within Indonesia's broader tourism education landscape.

The integration of Kolb's Experiential Learning Theory and Boyatzis's Competency-Based Education Framework directly informs how program outcomes are measured and interpreted. Kolb's learning cycle underpins the curriculum's design logic, emphasizing project-based, reflective, and experiential modes of instruction that translate into practical problem-solving capacity (as evidenced by the alumni ACPS mean score of 3.73). Boyatzis's model provides the evaluative lens for competency measurement, categorizing observed outcomes into cognitive, functional, and personal domains. The high ratings in leadership (LIT, mean = 3.77)

and industry relevance (CAT, mean = 3.84) demonstrate how competencies developed through experiential processes manifest in measurable performance indicators validated by employer surveys. Thus, the theoretical alignment is empirically substantiated through triangulated outcome metrics.

Implications and Suggestions

The findings of this study have several important implications for stakeholders in tourism education, including educational institutions, government agencies, and industry partners. Based on these implications, we offer the following suggestions for practice and future research:

For Educational Institutions

1. **Strengthen entrepreneurial education:** Given the identified gap in entrepreneurial innovation competencies, institutions should enhance curriculum elements related to innovation, business development, and entrepreneurial thinking. This could include dedicated entrepreneurship modules, startup incubation programs, and collaborative projects with entrepreneurial tourism businesses.
2. **Enhance industry immersion experiences:** The positive impact of industry exposure on graduate outcomes suggests that programs should maximize opportunities for workplace learning. Institutions could develop more structured approaches to industry placements, including progressive responsibility models that increase student autonomy throughout the program.
3. **Develop faculty capacity:** The transition to applied education approaches requires faculty with both academic expertise and industry experience. Institutions should invest in professional development programs that enhance faculty understanding of industry practices and applied pedagogies, potentially including faculty industry attachments and collaborative research with industry partners.
4. **Implement competency assessment systems:** Programs should develop more robust mechanisms for assessing applied competencies, moving beyond traditional academic metrics to include workplace performance indicators, portfolio assessment, and industry-validated skill demonstrations.

For Government Agencies

1. **Refine funding mechanisms:** Current funding models for higher education often fail to account for the higher costs associated with applied learning approaches. Government agencies should develop differentiated funding formulas that recognize the resource requirements of industry-based learning, including equipment, facility costs, and industry engagement activities.
2. **Streamline curriculum approval processes:** The rapidly evolving nature of tourism requires responsive curriculum development. Regulatory agencies should establish expedited approval pathways for industry-relevant curriculum changes while maintaining quality assurance standards.
3. **Develop applied research frameworks:** Current research evaluation systems often privilege traditional academic outputs over applied research. Agencies should develop frameworks that recognize and reward industry-relevant research outputs, including case studies, industry reports, and practical innovations.

For Industry Partners

1. **Formalize involvement in education:** While informal industry input is valuable, structured participation mechanisms such as industry advisory boards, adjunct teaching appointments, and collaborative curriculum development yield more sustainable results. Industry organizations should establish dedicated roles for educational engagement.
2. **Invest in shared learning facilities:** Co-investment in specialized learning environments can enhance educational outcomes while providing industry with access to innovation spaces. Examples might include training hotels, culinary innovation labs, or tourism technology centers.
3. **Support faculty industry exposure:** To maintain current industry knowledge, faculty require regular exposure to industry practices. Industry partners could establish faculty internship programs, industry sabbatical opportunities, and collaborative projects to enhance knowledge exchange.

Future Research

Future investigations could adopt longitudinal designs to assess the long-term career trajectories and entrepreneurial development of applied master's graduates. Comparative studies across ASEAN or other developing nations would help determine how cultural and policy contexts shape the success of applied higher education frameworks. Furthermore, quantitative modeling could examine the mediating effects of institutional culture and government policy on graduate employability outcomes. Specific attention should also be given to evaluating the impact of newly integrated entrepreneurship modules, particularly in strengthening graduates' innovation competencies. Finally, experimental designs involving industry co-teaching or cross-border applied learning projects could offer empirical insights into scalable models of industry-academia collaboration.

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