Work Environment, Efficiency, Effectiveness and Competency: A Structural Model on Employability of Tesda Graduates In-Tourism Sector

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ABSTRACT

This study developed a structural model of employability among Technical Education and Skills Development Authority (TESDA) graduates in the tourism sector in the Caraga Region, Philippines. It examined the influence of work environment, efficiency, effectiveness, and competency on employability outcomes. A quantitative descriptive–correlational and causal design was employed, with Structural Equation Modeling (SEM) as the primary analytical approach. Data were collected using a validated survey instrument, with reliability and validity confirmed through Cronbach's alpha and Confirmatory Factor Analysis.

Results indicated high levels of perceived work environment, efficiency, effectiveness, competency, and employability. Significant positive relationships were found among all variables, with competency emerging as the strongest predictor. Regression analysis showed that attitudinal and behavioral competencies, technical skills, industry alignment, and time utilization significantly predicted employability. The best-fit structural model confirmed that competency, supported by effective training and a conducive learning environment, enhances employability among TESDA tourism graduates.

Keywords*:* Work environment, Efficiency, Effectiveness Competency, Employability,

INTRODUCTION

The tourism sector remained one of the fastest-growing industries worldwide, contributing significantly to employment, income generation, and cultural exchange. In the Philippines, the government—through the Technical Education and Skills Development Authority (TESDA)—played a vital role in developing a competent workforce by offering competency-based training programs that were aligned with industry standards. However, the dynamic nature of the tourism industry presented challenges that required continuous evaluation of workforce readiness, particularly the graduates' ability to integrate effectively into actual work environments.

It was understood that a supportive work environment, employee efficiency, and overall effectiveness in performing job-related responsibilities were essential determinants of a graduate's employability. These dimensions reflected a graduate's ability not only to secure employment but also to remain competitive, adaptable, and productive in the evolving workplace, particularly in service-oriented sectors such as tourism. The competencies developed through TESDA's competency-based training programs were viewed as forms of human capital that contributed to workforce readiness. When graduates were placed in work environments that supported their growth, they were more likely to perform efficiently and effectively, thereby increasing their value to employers (Generalao, 2025). A conducive work environment enhanced job satisfaction, motivation, and productivity, all of which were vital in service-oriented industries like tourism. Studies confirmed that supportive work conditions, including adequate facilities, managerial support, and a healthy organizational climate, fostered employee commitment and productivity (Abdou et al., 2022; Guo, 2022).

Alongside this, in the tourism sector, efficiency was critical because service delivery often required quick decision-making, precision, and smooth coordination. Evidence showed that efficiency in tourism operations contributed to improved service quality and organizational competitiveness (Guo, 2024; Sánchez-Sánchez et al., 2022).

Moreover, effectiveness played a complementary role. It focused not merely on the process but on the achievement of desired results. Robbins and Coulter (2018) asserted that effectiveness was "doing the right things," which in tourism operations translated to resolving guest issues satisfactorily, meeting service standards, and achieving team goals. In tourism, effectiveness depended on aligning training with industry needs and ensuring that employees possessed not only technical skills but also problem-solving and customer service competencies. Research demonstrated that high-performance work systems and training alignment increased employee effectiveness and organizational outcomes (World Bank, 2024). Similarly, Nguyen et al. (2020) argued that service effectiveness was enhanced when employees applied both technical know-how and interpersonal skills in customer-facing roles.

Competency had long been recognized as a key determinant of effective performance in the workplace. It served as the core outcome of this study and was defined as the integration of knowledge, skills, and attitudes that enabled effective job performance (OECD, 2019). In the tourism sector, competencies extended beyond technical expertise to include behavioral and attitudinal dimensions such as communication, adaptability, and customer service orientation (Sultana, 2019). This study positioned competency as the result of an interrelated set of factors: a supportive work environment enhanced the application of skills, efficiency ensured resources were used productively, effectiveness aligned employee actions with organizational goals, and employability reflected graduates' preparedness to thrive in the industry.

Employability served as the cornerstone of this study. It represented the blend of technical skills, transferable skills, and personal attributes that allowed graduates to obtain and sustain meaningful work. In tourism, employability went beyond securing a job; it involved adaptability, problem-solving, communication, and customer orientation. Studies showed that tourism graduates with stronger employability skills were more likely to integrate successfully into the workforce (Matamanda & Hove, 2022; Tushar, 2023).

Despite TESDA's efforts to provide quality training, a growing concern persisted regarding whether its graduates were truly equipped with the competencies required by the tourism sector. Some graduates found employment mismatched to their field, while others struggled to meet workplace expectations. These gaps raised questions about training delivery, alignment with industry needs, and the actual transition from training to employment. It was recognized that employability was not solely defined by job acquisition but also by the capacity to sustain and excel in a given role. Tourism establishments demanded not only technical know-how but also soft skills such as communication, adaptability, and customer service orientation. In the evolving landscape of the tourism industry, workforce competence was paramount to ensuring service quality, customer satisfaction, and organizational success. Studies indicated that a disconnect often existed between training institutions and industry requirements, which resulted in a mismatch between graduates' competencies and the skills sought by employers (de Guzman & Choi, 2013).

In this context, SDG 4, Quality Education, aimed to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." It sought to ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university, and to substantially increase the number of youth and adults who had relevant skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship. SDG 8, Decent Work and Economic Growth, aimed to "promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all." It called for substantial reduction in the proportion of youth not in employment, education, or training, and for devising and implementing policies that promoted sustainable tourism to create jobs and support local culture and products.

This study, therefore, aimed to assess the interrelated factors of work environment, individual efficiency, and effectiveness in performance, competency, and employability of TESDA graduates in the tourism sector. It sought to provide insights into how these components influenced one another and determined whether TESDA's training programs sufficiently prepared graduates to meet the current demands of the tourism industry.

THEORETICAL AND CONCEPTUAL FRAMEWORK

The theoretical framework drew from established theories on organizational behavior, human capital, and competency-based education and training. These theories collectively explained how workplace conditions, individual and organizational performance dimensions, and employability factors contributed to the development of graduate competencies. In particular, human capital theory posited that education and training enhanced individual skills and productivity, which aligned with the role of TESDA in preparing graduates for industry-specific competencies. Competency-based models further emphasized that knowledge, skills, and attitudes were critical for effective job performance in dynamic sectors such as tourism.

Career Construction Theory

Career Construction Theory (CCT) emphasized how individuals actively constructed their careers through adaptability resources—concern, control, curiosity, and confidence—that enabled them to cope with transitions and uncertainties in dynamic labor markets. Developments in CCT introduced standardized assessment tools (e.g., Career Construction Interview, My Career Story workbook), digital interventions, and cross-cultural applications, highlighting its relevance in the 21st-century workplace (Savickas, 2023; Wang & Li, 2024). These refinements situated career adaptability within a broader framework encompassing employability, performance, well-being, identity development, and career satisfaction. Within the tourism sector, CCT provided a strong foundation for examining how TESDA graduates translated competencies and environmental resources into employability, efficiency, and effectiveness, thereby enhancing their competitiveness in evolving work environments.

This study was anchored on CCT (Savickas, 2020), which posited that individuals actively constructed their careers through adaptability resources, adaptive behaviors, and adaptation outcomes. At its core, CCT viewed career adaptability—comprising concern, control, curiosity, and confidence—as essential for coping with challenges, transitions, and demands in the workplace. Within the tourism sector, where TESDA graduates often faced dynamic labor market conditions, adaptability served as a vital mechanism for translating personal and environmental resources into professional competencies.

In this study, the work environment provided the setting that influenced the development of adaptability resources, while efficiency and effectiveness reflected adaptive responses that guided performance. Employability, on the other hand, demonstrated the ability of graduates to transform adaptability into opportunities, ensuring their relevance and competitiveness in the labor market. The dependent variable, competency, aligned with CCT's notion of adaptation results, representing the outcome of successfully integrating adaptability resources and adaptive behaviors into effective workplace performance. As supported by prior research (Rudolph et al., 2017; Datu & Yang, 2021), CCT offered a strong theoretical lens for explaining how contextual and individual factors interacted to shape the competencies of TESDA graduates in the tourism sector.

Motivation–Hygiene Theory

Herzberg's Motivation–Hygiene Theory continued to provide valuable insights into job satisfaction by distinguishing between hygiene factors (e.g., salary, working conditions, organizational policies) and motivators (e.g., recognition, achievement, growth opportunities). Research revisited this framework, emphasizing that while hygiene factors reduced dissatisfaction, motivators fostered engagement and sustained performance. In the tourism industry, where TESDA graduates operated in highly interactive and demanding environments, the

availability of supportive work conditions (hygiene) alongside opportunities for achievement and skill growth (motivators) directly influenced their efficiency, effectiveness, and employability outcomes.

Herzberg's two-factor theory asserted that job satisfaction and dissatisfaction arose from two distinct sets of factors. Hygiene factors—such as salary, company policy, working conditions, job security, interpersonal relationships, and supervision—did not actively motivate employees, but their absence caused significant dissatisfaction. Motivators—including achievement, recognition, meaningful work, responsibility, and growth opportunities—were intrinsic to the job and drove true job satisfaction and motivation. Recent literature highlighted that Herzberg's framework still held substantial value in modern organizational landscapes.

Systems Theory

Systems Theory (Von, 2015) explained that individuals, tasks, environments, and processes interacted dynamically. In this study, TESDA graduates were viewed as outputs of an educational system. Their efficiency and effectiveness in the tourism sector reflected how well the system prepared them for employment. Thus, graduates' performance could be traced back to inputs (training), throughputs (learning and assessment), and outputs (competencies).

Applying Systems Theory to the tourism sector, TESDA graduates operated within an interconnected system that included their work environment, efficiency, effectiveness, and employability. The work environment represented the institutional and organizational context that provided inputs and constraints. Efficiency and effectiveness functioned as processes, reflecting how individuals and organizations converted resources into outputs. Employability illustrated the adaptive interface between graduates and the external labor market, acting as a feedback mechanism that determined sustainability. Finally, competency emerged as the system's output—an outcome shaped by the dynamic interaction of environmental conditions, individual attributes, and labor market demands.

Graduate Employability Model

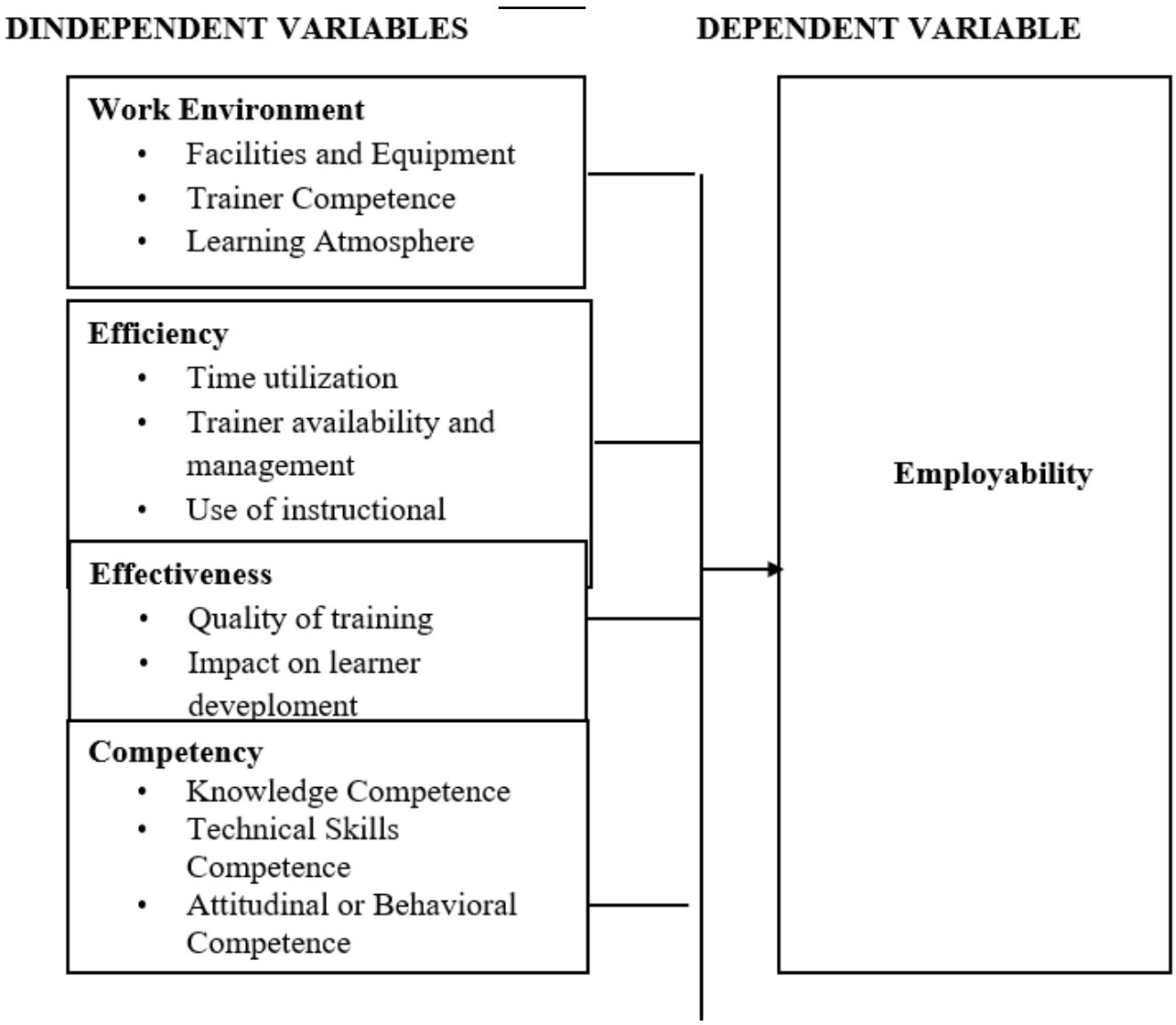
The study also integrated the Graduate Employability Model (Holmes, 2013), which conceptualized employability not as a fixed attribute but as a process of becoming employable through identity, performance, and social recognition. This model was suited for analyzing how TESDA graduates navigated job markets and how employers perceived their readiness and value. These frameworks suggested that a supportive work environment enhanced both efficiency and effectiveness, which in turn strengthened core competencies. These competencies then influenced the employability of TESDA graduates.

Capability Approach

The Capability Approach, as expanded in employability research, emphasized that sustainable employment outcomes depended not only on individual skills but also on the conversion factors that enabled or constrained the use of those skills in practice (Meerman et al., 2022; Caputo et al., 2024). This perspective was particularly relevant to TESDA graduates in the tourism sector, where the translation of competencies into actual work performance depended on supportive environments that allowed workers to exercise autonomy, creativity, and adaptability.

Furthermore, the Philippine Constitution provided that the State should ensure relevant, accessible, high-quality, and efficient technical education and skills development to support the development of high-quality Filipino middle-level manpower responsive to national development goals and priorities. It also encouraged active participation from various sectors, particularly private enterprises, as direct participants and beneficiaries of a trained and skilled workforce. Specifically, Republic Act 7796, known as the Technical Education and Skills Development Act of 1994, mandated TESDA to develop and implement a national system of skills standardization, assessment, and certification in the country.

Figure 1 Schematic Presentation of the Interplay of the Independent and Dependent Variables



Statement of the Problem

This study sought to develop a structural model of competency of TESDA Certified Graduates regarding the work environment, efficiency, effectiveness and employability in Tourism Sector. Specifically, this study aimed to address the following inquiries of the study

What is the level of work environment in terms of:

1.1 Facilities and equipment;

1.2 Trainer competence; and

1.3 Learning atmosphere?

What is the level of efficiency in terms of:

2.1 Time utilization;

2.2 Trainer availability and management; and

2.3 Use of instructional materials?

What is the level of effectiveness in terms of:

3.1 Quality of training;

3.2 Impact on learner development; and

3.3 Alignment with tourism industry needs?

What is the level of competence in terms of:

4.1 Knowledge Competence

4.2 Technical Skills Competence

4.3 Attitudinal or Behavioral Competence

5. What is the level of employability of TESDA tourism graduates?

6. Is there a significant relationship between competency, work environment, efficiency, effectiveness and the employability of TESDA graduates?

7. Which variable, singly or in combination predict competency, work environment, efficiency, effectiveness and employability of TESDA graduates?

8. What structural model best fit competency of TESDA graduates?

Hypotheses

Based on the preceding problems, the study tested the following null hypotheses at the 0.05 level of significance:

H_{01}: There was no significant relationship between competency, work environment, efficiency, effectiveness, and the competency of TESDA graduates.

H_{02}: There was no variable, singly or in combination, that best predicted the employability of TESDA graduates.

H_{05}: There was no structural model that best fit the employability of TESDA graduates.

Significance of the Study

This study held practical and academic significance as it explored the complex interrelationship among work environment, efficiency, effectiveness, and employability within the context of TESDA graduates in the tourism sector. The findings of this research provided valuable insights and benefits to the following stakeholders:

TESDA Management. It could provide empirical evidence on how competency-based training programs translated into employability and workforce readiness among graduates in the tourism sector. The results served as a basis for management to evaluate the effectiveness of its training strategies, improve quality assurance mechanisms, and strengthen linkages with the tourism industry to ensure that graduates were equipped with competencies that met evolving market demands.

TESDA and Other Technical-Vocational Institutions (TVIs). This research could help TESDA and TVIs evaluate and refine their curriculum and training programs. By identifying how competencies related to employability, efficiency, and effectiveness, TESDA tailored its interventions to improve workforce readiness

and adapt to the evolving demands of the tourism industry. The study's structural model was used to develop data-driven strategies for competency-based education and training.

TESDA and Training Institutions. This study could provide valuable insights into how TESDA's work environment and training programs affected the efficiency of skills development and employability of graduates in the tourism sector. It helped TESDA identify strengths and gaps in its competency-based training, curriculum alignment, and certification processes, ultimately guiding improvements to produce more competitive and job-ready graduates.

Employers and the Tourism Industry. Employers in the tourism sector could gain insights into the specific competencies that led to greater employee effectiveness and efficiency. This supported recruitment, training, and performance management practices. It also assisted in developing partnerships with TESDA and TVIs to ensure that training aligned with real-world job demands.

Department of Labor and Employment. The results could serve as input for planning desired interventions for certified graduates to promote gainful employment opportunities, advance workers' welfare, and maintain industrial peace.

Policy Makers and Government Agencies. This study could provide evidence-based recommendations on improving vocational education policies and workforce development programs. It supported the goal of building a skilled, responsive, and employable tourism workforce, particularly in rural and emerging areas.

TESDA Graduates in the Tourism Sector. Graduates could benefit from the study through a better understanding of the key competencies needed for sustainable employment and career advancement. The findings guided them in aligning their skills and work attitudes with industry requirements, thus enhancing their competitiveness and long-term employability.

Academic Community and Future Researchers. The study could contribute to the limited body of literature on technical-vocational education and training (TVET) in the Philippine tourism sector. It introduced a structural model that served as a theoretical and empirical basis for future research. Scholars interested in employability, competency development, and workforce transitions found this study useful for replication or comparative analysis.

Scope and Limitation of the Study

This study was delimited to assessing the employability of TESDA-certified graduates in the tourism sector in TESDA-accredited institutions. Employability was measured in terms of work environment, efficiency, effectiveness, and competency in various industries and establishments, as well as employment in course-related assessment and certification work.

The TESDA-certified graduates were limited to those in the Caraga Region, specifically from the TVET and TTI institutions of the provinces of Agusan del Norte, Agusan del Sur, Surigao del Norte, Surigao del Sur, and Dinagat Islands that offered courses or programs in the tourism industry. These included Barista NC II, Bartending NC II, Cookery NC II, Bread and Pastry NC II, Events Management Services NC II, Food and Beverage Services NC II & III, Front Office Services NC II, Housekeeping NC II & III, Local Guiding Services NC III, and Bookkeeping NC III.

The study was conducted in Technical Training Institutions (TTIs) and Technical-Vocational Education and Training (TVET) Centers.

The respondents of the study were TESDA-certified graduates in the tourism sector. The list of graduates was obtained from records submitted by the TVET Centers and TTIs. The respondents were collected from school years 2015–2023.

Demographic information was collected, including their respective offices and professional roles such as Barista, Bartender, Chef, Pâtissier, Front Office Attendant, Events Manager, Food and Beverage Attendant, Food and Beverage Supervisor, Housekeeping Attendant, and Housekeeping Supervisor.

The key variables (independent variables) included work environment, efficiency, effectiveness, and competency, while the dependent variable was the level of employability of TESDA graduates in the tourism sector.

Definition of Terms

To provide further understanding of the study, the following terms were defined theoretically and/or operationally:
Alignment with Tourism Industry Needs refer to the extent to which training programs and learning outcomes corresponded with industry standards and labor market demands.

Attitudinal or Behavioral Competence refer to the personal attributes, work values, and interpersonal behaviors that influenced how an individual performed in the workplace.

Competency define as a combination of knowledge, skills, and attitudes that enabled effective performance in specific tasks or jobs.

Efficiency refer to the optimal use of resources, time, and effort to accomplish tasks with minimal waste.

Effectiveness is the degree to which objectives, standards, or goals were achieved**.**

Employability is the set of skills, knowledge, and personal attributes that enhanced a graduate's likelihood of securing and maintaining employment.

Employment Status refer to an individual's work condition, such as full-time, part-time, contractual, or self-employed.

Facilities and Equipment are the physical resources, tools, and technology that supported training and job performance.

Impact on Learners' Development encompass the measurable effect or influence of training and work experiences on individuals or organizations.

Knowledge Competence refer to the cognitive aspect of competency that involved understanding and mastery of theoretical concepts, procedures, and information necessary for effective job performance.

Learning Atmosphere pertain to the overall environment and culture during training that fostered motivation, participation, and effective learning.

Quality of Training is define as the standard or level of excellence in training or work performance compared to established benchmarks.

Technical Skills Competence pertained to the practical ability to apply learned skills and perform job-related tasks effectively in actual work settings.

Time Utilization refer to the duration allocated to complete tasks, training activities, or job responsibilities.

Trainer Competence pertain to the knowledge, skills, and professional ability of trainers to deliver instruction and guide learners effectively.

Trainer Availability and Management encompass the qualified individuals **responsible** for teaching, mentoring, and facilitating the learning process.

Use of Instructional Materials pertain to the instructional resources such as manuals, modules, and digital tools used to support learning and training.

Work Environment refer to the physical, social, and organizational setting in which individuals performed their work.

REVIEW OF RELATED STUDIES AND LITERATURE

The increasing demand for industry-ready professionals in the tourism sector had amplified the need for technical and vocational education and training (TVET) systems to produce competent and employable graduates. In the Philippine context, the Technical Education and Skills Development Authority (TESDA) served as the lead agency responsible for ensuring that its training programs met national competency standards while responding to industry needs. As labor market demands shifted rapidly due to globalization and technological innovations, it became essential to examine how TESDA's training programs affected graduates' competencies and subsequent employability.

This chapter reviewed literature related to the primary constructs of the study: work environment, efficiency, effectiveness, and employability, and their influence on the competencies of TESDA graduates in the tourism sector. Drawing from academic and empirical sources, this chapter provided the theoretical grounding and empirical evidence needed to understand the relationships among these constructs and how they were operationalized in tourism-related technical education.

Work Environment

A supportive work environment had consistently been shown to influence both employee and student performance, particularly in service-oriented sectors such as tourism and hospitality. Studies confirmed that workplace design, culture, and organizational resources contributed significantly to task performance and employee commitment (Zhenjing, 2022). In the hospitality industry, an unfavorable environment had been directly linked to higher levels of work–family conflict and turnover intention (Abdou et al., 2022), while positive environments enhanced well-being and satisfaction (Demirović et al., 2022). Learning environments also mirrored these dynamics, as students thrived when physical, psychosocial, and pedagogical conditions were favorable (Closs et al., 2021; Rusticus et al., 2022). Kassab et al. (2024**)** highlighted that student engagement and achievement were positively correlated with a conducive educational environment, while Gupta and Singh (2021) noted that organizational leadership embedded in work climate influenced job outcomes. For TESDA graduates in the tourism sector, the alignment between the training environment and actual work settings ensured smoother adaptation, competence, and employability. Thus, the work environment functioned as both a training ground and a determinant of sustainable workforce participation.

Development programs and donor projects that upgraded facilities and trainers while strengthening workplace linkages reported measurable improvements in graduate readiness and employer satisfaction (ADB, 2021; Busso et al., 2023). Meta-analytic evidence further confirmed that organizational supports (coaching, opportunity to perform, feedback) were among the strongest predictors of transfer and effective on-the-job performance (Uslu et al., 2021).

Facilities and Equipment

The adequacy of facilities and equipment was crucial for effective technical-vocational education and training (TVET), as these resources bridged theoretical knowledge and practical application. UNESCO (2021) emphasized that well-equipped institutions fostered skills that matched industry needs, while ADB (2020) reported that equipment gaps continued to hinder employability outcomes in Asia-Pacific TVET systems. Olojuolawe (2022) found that limited tools in Nigerian vocational education negatively affected graduates' readiness for employment, a challenge echoed in UNEVOC/ILO reports stressing global disparities (UNEVOC,

2019). Njenga (2022) further identified that even with skilled trainers, the absence of modern facilities limited training effectiveness.

Conversely, UNESCO-UNEVOC (2021) showcased institutions that successfully upgraded facilities, leading to improved job relevance of graduates. Regional case studies also suggested that facility investments improved both teaching quality and student learning outcomes (ADB, 2020). For TESDA's tourism programs, ensuring updated kitchens, labs, and simulation equipment directly impacted graduates' competency and industry alignment. Hence, facilities and equipment were not peripheral, but central to producing employable graduates. High-fidelity facilities and industry-standard equipment were repeatedly associated with superior practical competency development in TVET, particularly in hospitality and tourism where hands-on skills were paramount. UNESCO and UNEVOC publications emphasized the centrality of adequately resourced workshops, training kitchens, mock front-office suites, and simulation tools for producing job-ready graduates (UNESCO, 2021). National TVET statistics and program evaluations (e.g., TESDA reports) linked investments in physical infrastructure to higher completion rates, stronger OJT performance, and better employer ratings of graduate readiness (TESDA, 2024; ADB, 2021). Empirical studies showed that where simulation or workplace-based learning **s**upplemented limited facilities, transfer improved; however, simulations had to be complemented by real equipment exposure to maximize complex psychomotor and customer-service competencies (Kerins et al., 2021). Evaluations of TVET modernization projects reported that improved facilities not only increased competency scores but also raised students' confidence and perceived employability in tourism labor markets (Busso et al., 2023; Developing Work-Ready Reports, 2024).

Trainer Competence

Trainer competence remained a cornerstone of effective TVET delivery, as trainers served as the bridge between industry requirements and student learning outcomes. OECD (2022) emphasized that vocational teachers had to master both occupational expertise and pedagogical skills to meet diverse learner needs. Diao (2023) extended this by proposing multi-role assessments that recognized trainers' industry adaptability and instructional quality. Antera (2023) found that professional development opportunities enhanced competence and learner satisfaction. Similarly, Njenga (2022) underscored that trainers' professional growth ensured alignment with industry innovation, while Chakroun (2019) argued that national qualification frameworks strengthened trainer accountability. UNEVOC and ILO (2019) highlighted global initiatives addressing trainer shortages and competence gaps. Emerging models, such as those developed in Asia-Pacific, showed that competent instructors significantly raised training effectiveness and employability outcomes (Research on TVET Trainer Competence, 2024). For TESDA graduates, trainer competence was directly linked to competency mastery and industry readiness, underscoring the strategic role trainers played in shaping the workforce. In TVET and tourism, employers commonly reported that graduates required remedial on-the-job training when trainers lacked recent industry experience or when continuous professional development was absent (Mitre Cotta et al., 2024; Busso et al., 2023).

Programs that institutionalized industry secondments for trainers, formal trainer credentialing, and continuous pedagogical upskilling showed improved trainee performance and stronger alignment with employer expectations (ADB, 2021; Kerins et al., 2021). Trainer competence also supported effective use of instructional materials and technology-enhanced learning, amplifying training outcomes when trainers were competent in both content and delivery methods (Sitzmann et al., 2006; Uslu et al., 2021).

Learning Atmosphere

The psychosocial climate of training—interactional norms, feedback culture, peer collaboration, and psychological safety—strongly influenced motivation, self-efficacy, and transfer. Reviews indicated that active, experiential pedagogies and collaborative learning environments produced higher engagement and better soft-skill development (communication, problem solving), which were essential in tourism occupations (Ruijuan, 2024; Seyitoğlu, 2022). Learning atmosphere moderated the effectiveness of delivery modalities; for example, e-learning and blended approaches yielded comparable knowledge gains only when the broader learning

environment offered practice, supervision, and reflection opportunities (Salas et al., 2012). Tracer and employer surveys in tourism contexts showed that graduates who experienced realistic, feedback-rich learning climates were more likely to be hired and quickly became productive (TESDA, 2024; Developing Work-Ready Reports, 2024).

The atmosphere in which learning occurred had a strong influence on both cognitive and affective outcomes. Rusticus et al. (2022) highlighted that key elements of a positive learning environment included mutual respect, inclusivity, and accessible resources. Closs et al. (2021) added that pedagogical and physical dimensions interacted to shape learning experiences, while Kassab et al. (2024) confirmed that an engaging learning climate led to higher student performance. In higher education, Makaremi (2024) showed that classroom atmosphere significantly impacted student well-being, an outcome echoed by Molloy (2024), who emphasized inclusivity for diverse learners.

Efficiency

Efficiency in training and workplace processes related to how quickly and reliably trainees converted learning into productive performance. Research on training economics and organizational performance tied efficiency gains to deliberate training design (spaced practice, feedback), workplace supports, and process improvements. In tourism operations, efficiency measures (reduced service times, error rates, quicker onboarding) often improved after competency-based training when aligned with standard operating procedures and supervised practice (Busso et al., 2023; Research on manufacturing/operations training). Microlearning and just-in-time modules had been shown to increase efficiency by enabling rapid upskilling and shorter time-to-competence in dynamic tasks (Arist, 2025).

Efficiency was a critical factor in both organizational performance and educational delivery. Guo (2024) illustrated how efficiency assessments in tourism destinations highlighted sustainability challenges, while Sánchez-Sánchez et al. (2022) noted that institutional efficiency drove competitiveness in mass tourism contexts. In TVET, internal efficiency was measured by resource utilization, completion rates, and employability outcomes (Joo, 2018). Alam and Ahmad (2021) found that employee efficiency positively correlated with service quality, reflecting how time and resource use directly affected outcomes. Guo (2022) further confirmed that workplace environments influenced task performance through commitment, linking efficiency with psychosocial dimensions. OECD (2022) reports similarly stressed that efficient training systems required integrated curricula and strong industry partnerships. Case studies revealed that efficient institutions achieved higher graduate employability and reduced mismatch in labor markets (Sánchez-Sánchez et al., 2022). Thus, for TESDA programs, efficiency in delivery translated into more competent, employable graduates who met tourism industry demands.

Time Utilization

Effective time utilization was essential for maximizing learning outcomes in TVET contexts. Harris and Brophy (2020) demonstrated that structured time management improved vocational students' performance, while Mora and Lane (2019) found that time-on-task in hospitality labs enhanced practical skill mastery. Usman (2019) confirmed that efficient use of classroom time contributed to improved achievement, especially when paired with conducive environments. In hospitality, Alam and Ahmad (2021) reported that employee time utilization improved service throughput, suggesting parallels in student training efficiency. International frameworks also highlighted that curricula should have allocated balanced contact hours and workplace learning time to foster both theory and practice (OECD, 2022; UNESCO, 2021).

Duruji and Olarenwaju (2017) noted that poor time utilization often resulted in skill gaps, while Makaremi (2024) added that structured schedules reduced student stress. For TESDA, time utilization in training was vital, as it determined the balance between skill acquisition and employability readiness in the tourism industry. Scheduling practical OJT placements and aligning practice time with peak industry cycles (e.g., tourism high season) improved the authenticity of learning and employer receptivity (UNESCO, 2021; TESDA, 2024). Time

allocation also mattered for competency assessment—programs that embedded regular formative assessment and reflective practice across weeks achieved better long-term competency than those relying on end-of-course assessments (Kerins et al., 2021).

Trainer Availability and Management

The availability of qualified trainers and sound management (workload, scheduling, professional development) were central to training continuity and quality. Cases from TVET system reforms showed that trainer shortages, high workloads, and weak management systems reduced contact hours, limited practical coaching, and eroded competency outcomes (ADB, 2021; UNESCO, 2021). Conversely, institutions that invested in trainer deployment planning, mentoring systems, and performance incentives reported higher training completion rates and stronger employer satisfaction (Mitre Cotta et al., 2024; Busso et al., 2023). Management practices that coordinated OJT, employer placements, and trainer rotations helped sustain consistent delivery of hands-on learning in tourism programs.

The availability and effective management of trainers played a pivotal role in sustaining high-quality TVET delivery. OECD (2022) stressed that teacher shortages and uneven distribution remained global challenges. UNESCO-UNEVOC (2021) added that future-oriented policies had to address recruitment, deployment, and retention to ensure training quality. Antera (2023) observed that professional competence was closely tied to trainer availability, as overstretched instructors struggled to maintain instructional quality. ADB (2020) similarly reported that trainer shortages undermined institutional capacity, particularly in rapidly growing sectors like tourism. Njenga (2022) emphasized that continuing development ensured not only competence but also retention of skilled trainers. Regional case studies highlighted the need for workforce planning and equitable trainer distribution (ADB, 2020; UNEVOC, 2021). Strategies such as effective management, workload distribution, and incentive systems (JOTVET, 2021) had been proposed to address availability challenges. For TESDA, ensuring adequate trainer numbers and strong management structures was essential for maintaining program effectiveness and employability outcomes.

Use of Instructional Materials

Instructional materials were fundamental in creating effective learning experiences, especially in competency-based education. Rusticus et al. (2022) showed that well-designed materials enhanced engagement and inclusivity, while Dai (2023) emphasized the growing preference for digital and smart classroom resources. Kassab et al. (2024) found that relevant instructional resources fostered higher engagement and achievement, demonstrating their impact on student outcomes. OECD (2022) highlighted that vocational trainers had to adapt instructional materials to industry standards, ensuring relevance and applicability. UNESCO (2021) also advocated for aligning materials with industry-based competencies to close the skills gap. Makaremi (2024) noted that instructional resources, particularly in practical labs, shaped student outcomes and confidence. Joo (2018) further argued that excellence in TVET depended on integrating instructional materials that reflected workplace realities. For TESDA tourism graduates, the effective use of instructional materials ensured mastery of skills that translated directly into workplace competency and employability.

In tourism TVET, high-quality task sheets, service scripts, and simulated guest scenarios raised both technical and customer-service competencies; digital repositories and adaptive learning systems further supported individualized remediation (UNESCO, 2021). Effective use of materials required trainer competence and sufficient time to integrate materials into practice sessions (Cotta et al., 2024; Uslu et al., 2021).

Effectiveness

Effectiveness in TVET and tourism contexts referred to the extent to which training and workplace practices produced the intended service outcomes, such as meeting quality standards, resolving guest issues, and contributing to organizational goals. Recent empirical work showed that training alignment and high-performance work systems were central to achieving effectiveness: organizations that integrated learning with clear performance expectations recorded higher service performance and customer satisfaction (Montañés-

Sánchez & Ramos, 2021; Nguyen et al., 2020). Large-scale reviews and measurement frameworks from international bodies (OECD, 2019; World Bank, 2020) emphasized that effectiveness had to be assessed at multiple levels—individual, programmatic, and firm—using both subjective (employer satisfaction, self-reported performance) and objective (job match, productivity metrics) indicators. Sectoral research in tourism highlighted that firm-level practices (skills upgrading, operational protocols) materially influenced employee effectiveness, implying that training alone was insufficient without workplace reinforcement (Sánchez-Sánchez et al., 2022).

Moreover, studies of TVET quality indicated that effectiveness was enhanced when curricula incorporated work-integrated learning, ongoing assessment, and industry partnerships (Tomlinson, 2017). For TESDA graduates, therefore, effectiveness was produced by the reciprocal fit between curriculum content, workplace routines, and supervisory systems that translated competencies into measurable job performance. Systematic reviews in health, management, and vocational sectors showed consistent positive effects of well-designed programs on competencies and performance, but heterogeneous impacts when workplace supports were weak (Mitre Cotta et al., 2024; Busso et al., 2023; Human Resources for Health, 2024). Measurement of effectiveness in TVET therefore included employer feedback, OJT performance, and tracer studies to capture real labor-market impact.

Quality of Training

Quality of training in TVET denoted the degree to which educational programs delivered relevant, valid, and reliable learning experiences that met industry needs and promoted employability. International reports and reviews stressed that teacher quality, curriculum relevance, assessment rigor, and industry engagement were key determinants of training quality (UNESCO-UNEVOC, 2021; OECD, 2022). Empirical studies demonstrated that programs with systematic quality assurance mechanisms and strong employer partnerships yielded better learning outcomes and smoother school-to-work transitions (European Commission/Cedefop, 2020; Joo, 2018). Research also showed that quality was multidimensional: it included input measures (facilities, trainer competence), process measures (pedagogy, assessment), and output measures (certification validity, graduate outcomes) (Tomlinson, 2017; UNESCO, 2021). Contextual evidence from TVET sectors indicated that quality improvements—such as updating instructional materials, strengthening trainer CPD, and institutionalizing workplace learning—led to measurable gains in graduates' job readiness (Barwani, 2023). Consequently, quality of training functioned as a foundational condition for competency formation: when TESDA and similar institutions maintained rigorous quality assurance and industry alignment, trainees were more likely to develop the usable skills that employers required**.**

Quality in TVET was multi-faceted—standards alignment, trainer qualifications, facility fidelity, assessment validity, and industry partnership. International reviews recommended competency-based curricula, external quality assurance, and industry involvement as prerequisites for high-quality outcomes (UNESCO, 2021; ILO/UNESCO, 2018).

Impact on Learner Development

The impact of TVET and vocational programs on learner development was both cognitive and socio-professional: programs aimed to build technical proficiency, problem-solving ability, and career identity. Recent capability-oriented studies demonstrated that learner development depended on conversion factors—organizational supports, teaching quality, and personal agency—that enabled learners to convert training resources into meaningful functionings (Meerman et al., 2022). Mixed-methods reviews showed that enriched learning environments and work-integrated experiences produced stronger gains in competence, confidence, and professional identity (Closs et al., 2021; Jackson, 2023). Longitudinal and comparative studies found that vocational curricula emphasizing authentic practice, reflective learning, and mentorship accelerated early-career development compared to purely classroom-based programs (Kemper et al., 2024; Rusticus et al., 2022). The literature also underscored how noncognitive outcomes—resilience, communication, and adaptability—mediated the relationship between technical instruction and employability (Jackson, 2023). In the tourism sector specifically, practical exposure through internships and industry placements was shown to consolidate both

technical mastery and service orientation, which were critical for on-the-job learning and career progression (UNESCO, 2021).

Thus, learner development in TVET was best conceptualized as an integrated growth trajectory shaped by pedagogy, contextual opportunities, and reflective practice. Training affected both technical KSAs and soft skills; recent syntheses demonstrated that well-structured TVET programs increased technical competency, self-efficacy, and workplace adaptability—critical for dynamic tourism roles (Uslu et al., 2021; Mitre Cotta et al., 2024). Longitudinal tracer studies suggested that these impacts were greatest when training was followed by supervised practice and employer mentorship (Kerins et al., 2021; TESDA, 2024). Furthermore, technology-enhanced learning (VR/AR, simulations) accelerated skill acquisition for complex tasks when integrated with reflective feedback (Martins et al., 2021).

Alignment with Tourism Industry Needs

Alignment between TVET programs and tourism industry needs was central to closing the skills mismatch and enhancing graduate employability. Recent policy and empirical work stressed that curricula had to be co-designed with employers, updated regularly to reflect sector trends, and strengthened through formal partnerships to ensure job relevance (World Bank, 2024; ILO/UNESCO-UNEVOC, 2019). Case studies in developing country contexts indicated that where alignment was strong—characterized by internships, competency standards, and employer participation—graduates demonstrated higher job matches and quicker labor market absorption (Phillips et al., 2021; Matamanda & Hove, 2022). Research also highlighted the need for soft-skills integration (customer service, communication, adaptability) alongside technical skills, as tourism employers increasingly valued service-oriented competencies (Stangl, 2024; Özlem, 2024).

Moreover, policy analyses recommended institutional mechanisms—sector skills councils, regular tracer studies, and continuous employer feedback loops—to maintain relevance (Rodríguez, 2024). For TESDA's tourism programs, alignment thus required both curriculum responsiveness and sustained industry engagement so that competency frameworks reflected real workplace tasks and evolving tourist market demands. Alignment of curriculum, competency standards, and OJT with industry needs was repeatedly cited as the single most important predictor of graduate employability in tourism. National TVET reforms and tracer studies recommended co-created curricula, employer advisory boards, and frequent updating of training regulations to reflect industry practices (TESDA, 2024; UNESCO, 2021). Evidence from program that graduates from strongly aligned programs achieved faster placement and better job relevance than those from poorly linked programs (Busso et al., 2023; ADB, 2021).

Competency

Competency was conceptualized as the integration of knowledge, skills, attitudes, and values that enabled effective performance in complex job contexts (OECD, 2019). Contemporary competency frameworks for TVET emphasized adaptive capabilities—problem solving, communication, and teamwork—alongside domain-specific technical skills (Sultana, 2019; OECD/Cedefop, 2020). Empirical tests of career adaptability models showed that individual adaptability resources predicted competency outcomes and early career success (Rudolph et al., 2017). In addition, the Capability Approach connected competency to real functionings by emphasizing the conversion of skills into meaningful work opportunities (Meerman et al., 2022). Recent graduate capital research also linked competency to accumulable capitals—human, social, and psychological—that collectively determined employability and career progression (Tomlinson, 2017; Tecilazić, 2024). For TESDA graduates in tourism, competency thus represented both the tangible skills required by employers and the broader adaptive capacities that enabled graduates to perform, learn on the job, and progress in service-oriented careers.

Delos Santos and Lim (2023) emphasized precise competency alignment in hospitality training to enhance service delivery. Moreover, Dizon and Carreon (2023) linked competency-based instruction to improved technical proficiency and task accuracy. Mercado (2023) documented that graduates perceived their service quality and technical skills as strengthened by effective training. Sharil et al. (2024), Mariano and Tantoco

(2023), and Mengistu and Negasie (2022) found that workplace feedback framed in terms of technical accuracy and service orientation often reflected training-induced competence gains. Daquila and Magno (2022) supported these findings by highlighting infrastructure's role in enhancing competency delivery. Sumaya and Ortega De La Cruz (2024) demonstrated that TESDA tourism training significantly improved trainee competencies when quality delivery and assessment systems were aligned, though gaps in infrastructure and time affected outcome consistency.

Knowledge Competence

Knowledge competence referred to the theoretical and conceptual understanding that allowed graduates to make sound decisions and solve job-related problems. It involved mastery of relevant concepts, industry standards, and procedures applicable to tourism operations. Recent studies emphasized that the acquisition of solid knowledge competence significantly enhanced graduates' readiness for employment. For instance, Ge and Kim (2024) observed that tourism students in vocational colleges possessed high levels of theoretical knowledge but required further integration of practical applications. Similarly, Sumaya and Ortega-Dela Cruz (2023) noted that although TVET programs effectively built foundational knowledge, alignment with 21st-century workplace requirements remained necessary to improve employability outcomes.

Alejziak (2022) highlighted that academic institutions played a pivotal role in developing cognitive and social competencies, asserting that theoretical knowledge supported professional behaviors in tourism graduates. Punsalan, Elegino, and Custodio (2024) found that knowledge gained from tourism management programs significantly influenced job relevance and self-perceived preparedness for work. Omarkhanova et al. (2022) emphasized that knowledge of sustainability, cultural awareness, and service standards directly correlated with higher employability in the tourism sector. Likewise, Mariano and Tantoco (2021) confirmed that the inclusion of knowledge-based training modules in TVET programs contributed **t**o the enhancement of theoretical understanding and professional readiness.

Rahmawati & Abdullah (2023) demonstrated that digital and data-driven learning approaches in vocational education strengthened knowledge competence by linking classroom learning with real-world applications. Bas et al. (2024) used a decision-support system to assess the effectiveness of training on employability and found that knowledge-oriented courses improved cognitive preparedness and adaptability. Similarly, Campo et al. (2025) revealed that employers consistently valued tourism graduates' foundational knowledge of industry processes and safety standards. Collectively, these findings **reinforced** that knowledge competence formed the intellectual core of overall competency and was indispensable for employability in the tourism sector.

Technical Skills Competence

Technical skills competence encompassed the procedural, operational, and manual capabilities required to perform specific job functions. It represented the psychomotor dimension of competency, allowing graduates to translate knowledge into effective workplace actions. In tourism and hospitality, this included customer service operations, use of reservation systems, safety management, and facility maintenance. Wong (2015) and Sun (2024) earlier established that technical proficiency strongly predicted job performance and employer satisfaction, while recent studies confirmed these associations in TVET and higher education contexts.
Toling et al. (2023) found that TESDA-certified hospitality graduates demonstrated high technical skill proficiency, granting them a significant employability advantage. Similarly, Zaguirre et al., (2019) revealed that practical internships substantially improved students' operational competencies, with regional training contexts influencing technical mastery. Rahmawati et al. (2023) noted that integrating digital skills in technical training enhanced graduates' readiness for technology-driven tourism services. Awodiji and Magogodi (2022) emphasized the complementary relationship between soft and technical skills, suggesting that both dimensions were essential for holistic employability development.

Further, "Technical-Vocational Education and Training: A Way Forward to Developing Skills for the Tourism Sector in the Twenty-First Century" (2024) reported that modern TVET programs focusing on technical

expertise led to higher employment rates among graduates. De Guzman, and Maling (2025) found that technical and practical skills were the strongest predictors of work placement and retention among hospitality and tourism management graduates in the Philippines. Kovalev & Rizoiu (2025) proposed skill-driven certification pathways to ensure that technical competencies met evolving industry demands. Punsalan et al. (2024) concluded that hands-on training and industry exposure played a vital role in enhancing technical proficiency. Collectively, these studies affirmed that technical skills competence was a critical determinant of performance and employability for TESDA graduates in the tourism sector.

Attitudinal or Behavioral Competence

Attitudinal or behavioral competence referred to the affective and interpersonal attributes that influenced how individuals performed in organizational settings. These included professionalism, adaptability, teamwork, customer orientation, and ethical conduct. Behavioral competencies shaped how employees engaged with others, managed stress, and responded to workplace challenges. Lee (2014) and Wakelin-Theron et al. (2019) underscored that positive work attitudes and service orientation were integral to the tourism and hospitality profession, often determining the quality of customer experiences.

Recent research continued to validate this perspective. Intakaew (2019) identified personality, interpersonal skills, and professionalism as key behavioral predictors of employability among airline service professionals. Bongalos and Saab (2025) reported that hospitality graduates' behavioral and soft skills significantly influenced job performance and retention. Remulla and Lara (2024) highlighted how attitudinal traits, such as confidence and resilience, empowered women's participation in the tourism industry. Campo et al. (2025) observed that employers placed high value on behavioral competencies, including initiative and teamwork, when assessing graduates' workplace readiness.
Punsalan et al. (2024) found that behavioral competencies strongly correlated with graduates' adaptability in dynamic work environments. Mariano and Tantoco (2021) noted that effective communication and positive work attitudes increased the likelihood of career advancement. Awodiji and Magogodi (2022) supported this by demonstrating that soft skills training complemented technical instruction in enhancing employability. Additionally, Omarkhanova et al. (2022) and Melchor et al. (2025) indicated that employers increasingly emphasized behavioral traits—such as cultural sensitivity and service ethics—when hiring tourism professionals. Together, these findings suggested that attitudinal or behavioral competence completed the competency framework by ensuring that knowledge and technical skills were applied with professionalism, empathy, and integrity.

Employability

Contemporary scholarship reconceptualized employability as a multidimensional and developmental construct constituted by various forms of capital—human, social, cultural, and psychological—that graduates accumulated and deployed (Tomlinson, 2017; Tecilazić, 2024). Systematic reviews identified key employability skills for the 21st century—communication, adaptability, digital literacy, and problem solving—and emphasized that high-impact practices (internships, industry projects) significantly enhanced employability outcomes (Tushar, 2023; Tecilazić, 2024). The Capability Approach and sustainable employability perspectives further argued that employability depended on conversion factors (organizational support, policy context) that enabled graduates to translate competencies into quality work (Meerman et al., 2022). Recent empirical work also highlighted the role of identity and narrative—how graduates presented and signaled their capabilities to employers—which mediated the pathway from competence to actual employment (Jackson, 2023).

In the tourism sectors, specific evidence showed that both technical mastery and service orientation were essential, and that institutional linkages (industry placements, employer partnerships) substantially increased employability rates (Matamanda & Hove, 2022; World Bank/TESDA reports, 2023). Employability in TVET was shaped by cumulative training quality, industry alignment, and labor-market conditions. Meta-analyses indicated that competency-based, employer-linked training increased the odds of employment, but effect size varied by sector and economic context (Busso et al., 2023; Uslu et al., 2021). TVET tracer studies (including

national reports) showed that tourism graduates with strong practical exposure and effective OJT experienced higher immediate placement and employer satisfaction—conditions that enhanced longer-term employability (TESDA, 2024; UNESCO, 2021).

Relationship of Employability and Work Environment, Efficiency, Effectiveness, and Competency

Employability represented an individual's capacity to gain and sustain employment by utilizing a combination of skills, knowledge, attitudes, and adaptability that aligned with the evolving needs of industries (Yorke, 2006). In the context of Technical Education and Skills Development Authority (TESDA) graduates in the tourism sector, employability was influenced by several interrelated organizational and personal factors, notably the work environment, efficiency, effectiveness, and competency. These variables collectively contributed to shaping the readiness and sustainability of employment among graduates trained under technical-vocational education frameworks.

The work environment significantly influenced graduates' employability by determining their motivation, performance, and job satisfaction. A supportive work environment—characterized by adequate facilities, managerial support, fair compensation, and healthy relationships—encouraged continuous learning and professional growth (Anjum et al., 2021). In the tourism industry, a positive organizational climate fostered creativity and customer orientation, key factors that enhanced employability and career development (Raeissi et al., 2020).

Efficiency pertained to how effectively resources such as time, energy, and materials were utilized to achieve maximum productivity (Drucker, 2017). In employability terms, efficiency reflected an individual's ability to complete tasks promptly with minimal errors, thereby increasing organizational value (Kumar & Dhamija, 2020). In technical-vocational contexts, efficient work habits signaled job readiness and adaptability, which employers considered essential for sustainable employment (Mariano & Tantoco, 2021).

Effectiveness related to the extent to which an individual or organization achieved intended objectives (Cameron, 2015). Within the employability framework, effectiveness reflected one's ability to meet performance standards, deliver quality outcomes, and contribute to organizational success (Nguyen et al., 2020). In the tourism sector, effectiveness encompassed service quality, customer satisfaction, and adherence to operational protocols—competencies that determined employability in highly service-oriented environments.

Competency encompassed the integrated use of knowledge, technical skills, and behavioral attributes essential for effective job performance (Boyatzis, 2008; Spencer & Spencer, 1993). In TVET systems such as TESDA, competencies were structured into standards that defined occupational proficiency across industries. The relationship between competency and employability was well established: higher competency levels led to increased job opportunities, better performance, and greater adaptability to evolving labor market needs (Sumaya & Ortega-Dela Cruz, 2023).

The reviewed literature illustrated that employability was a multifaceted outcome shaped by the synergy among the work environment, efficiency, effectiveness, and competency. A supportive work environment fostered learning and job satisfaction; efficiency enhanced productivity and resource use; effectiveness ensured goal achievement and quality service delivery; and competency integrated all these elements into tangible workplace performance. For TESDA graduates in the tourism sector, strengthening these factors within training programs and institutional frameworks enhanced not only employability but also long-term career development and industry competitiveness.

Predictors of Employability: Work Environment, Efficiency, Effectiveness, and Competency

Employability, defined as the individual's capacity to obtain and maintain meaningful employment, was influenced by multiple interrelated factors, including the work environment, efficiency, effectiveness, and competency. These predictors determined how well graduates transitioned from training institutions into the

labor market, particularly within the tourism and hospitality sectors where skills, adaptability, and workplace readiness were critical (Pitan & Muller, 2020; Fugate & Kinicki, 2018).

The work environment encompassed the physical, social, and organizational conditions that influenced employees' motivation, performance, and job satisfaction. A conducive work environment—marked by supportive management, adequate facilities, and positive interpersonal relations—was found to enhance employability outcomes (Chinomona & Sandada, 2021). According to Ismail, Jabar, and Long (2020), a safe, resource-rich environment promoted the development of technical and interpersonal competencies essential for long-term employment. Similarly, Ocen et al. (2020) argued that organizations offering supportive training environments fostered continuous learning and adaptability among employees, thereby improving employability.

Efficiency reflected the optimal use of time, resources, and effort to achieve desired outcomes. In employability research, efficiency signified the graduate's ability to perform tasks quickly and accurately while maintaining quality standards (Turner & Pennington, 2015). Empirical studies showed that efficiency significantly affected career success, as employers increasingly valued productivity and time management as employability indicators (Gibbs, 2017).

Effectiveness pertained to achieving organizational goals and expected outcomes with optimal performance and minimal waste. In the context of employability, it measured how well individuals met job requirements and contributed to organizational success (Hossain & Hossain, 2019). According to Onah and Anikwe (2019), effectiveness at work resulted from the alignment of skills, motivation, and work conditions, all of which enhanced a graduate's reputation and career advancement opportunities.

Recent studies affirmed that effectiveness remained a strong predictor of employability. Melchor et al. (2025) found that employees who demonstrated effectiveness in service delivery were more likely to achieve career stability and promotion. Similarly, Mariano and Tantoco (2021) emphasized that effectiveness—manifested through goal attainment and service quality—translated to employability in tourism and hospitality organizations.

Competency—comprising knowledge, technical skills, and attitudinal or behavioral attributes—remained one of the most significant predictors of employability (Boyatzis, 2008; Spencer & Spencer, 1993). Studies across various contexts confirmed that competency development directly enhanced graduates' labor market readiness (Punsalan et al., 2024; Toling et al., 2023). According to Rahmawati et al. (2023), competency-based training equipped students with cognitive, technical, and interpersonal skills necessary for effective job performance. Omarkhanova et al. (2022) emphasized that competency, particularly in communication, adaptability, and teamwork, predicted long-term employability in the tourism industry. Ge and Kim (2024) likewise found that integrating knowledge and technical training into vocational curricula enhanced graduates' ability to secure employment. Melchor et al. (2025) noted that competency strongly predicted both job placement and retention among TESDA graduates. In addition, Alejziak (2022) asserted that behavioral competence—such as professionalism and cultural awareness—supported sustained employability by improving customer service outcomes.

Structural Model on Employability: Work Environment, Efficiency, Effectiveness, and Competency

The proposed structural model illustrated the interrelationships among work environment, efficiency, effectiveness, competency, and employability, emphasizing how these variables collectively influenced the professional readiness of TESDA graduates in the tourism sector. The model posited employability as the ultimate dependent construct that reflected an individual's ability to secure and sustain meaningful employment. Drawing from human capital and systems theories, the model assumed that a conducive work environment served as a foundational predictor, shaping employees' behavior, motivation, and skill application (Ismail et al., 2020). A supportive and resource-rich environment enhanced individuals' learning experiences and promoted

the acquisition of competencies that directly influenced their efficiency and effectiveness at work (Asiedu-Appiah et al., 2022).

Competency, defined as the integrated combination of knowledge, technical skills, and attitudinal or behavioral attributes, functioned as a core determinant of employability (Boyatzis, 2008; Spencer & Spencer, 1993). Within the model, competency operated both as a direct predictor of employability and an indirect mediator linking work environment to performance outcomes. Graduates with high levels of knowledge, technical proficiency, and positive work attitudes were more capable of performing efficiently and effectively, which enhanced their likelihood of long-term employment (Ge & Kim, 2024; Rahmawati et al., 2023). Efficiency represented the ability to utilize resources, time, and effort optimally in achieving job-related goals, while effectiveness referred to the extent to which individuals met or exceeded organizational standards of performance (Melchor et al., 2025). Both constructs served as behavioral outcomes of competency and environmental support, reflecting an individual's capacity to translate training into measurable performance and service quality.

The structural model therefore suggested that employability was not solely a function of technical training but a dynamic outcome of interdependent variables. A favorable work environment enhanced competency development, which in turn improved efficiency and effectiveness, culminating in higher employability. This interconnected framework aligned with previous findings that highlighted the mediating roles of competence and work performance in shaping employment outcomes (Punsalan et al., 2024; Omarkhanova et al., 2022). Through this model, the study aimed to empirically test the direct and indirect effects of work environment, competency, efficiency, and effectiveness on employability using a structural equation modeling (SEM) approach. Establishing these relationships provided a deeper understanding of how training institutions and employers could strengthen workforce readiness and sustain employability in the tourism industry.

METHODOLOGY

This chapter included the research methodologies and encompassed various components of the study, such as the research design, the individuals who participated in the study and the method used to select them, the tools used to collect data, the accuracy and consistency of these tools, the process of gathering data, and the statistical methods employed.

Research Setting

The study was conducted in selected provinces within the Caraga Region, specifically focusing on Technical Education and Skills Development Authority (TESDA)-accredited institutions that offered tourism-related programs. The Caraga Region, located in the northeastern part of Mindanao, Philippines, included the provinces of Agusan del Norte, Agusan del Sur, Surigao del Norte, Surigao del Sur, and the Dinagat Islands. These areas were known for their rich cultural and natural attractions, making tourism a critical component of regional economic development.

Figure 2 Map of Region Caraga

TESDA training institutions within the region served as the primary settings for data collection. These institutions offered National Certificate (NC) Levels II and III. They were TESDA-administered and accredited institutions in the Caraga Region (particularly Agusan del Norte, Butuan City, Agusan del Sur, and Surigao del Sur) that offered tourism-related programs, with sources cited from up-to-date official and informational pages.

Research Design

The study utilized a quantitative research approach that employed a descriptive–correlational and causal research design, with Structural Equation Modeling (SEM) as the main analytic strategy. The design was chosen because it allowed the examination of both observed relationships and latent structures among the variables of interest—namely, work environment, efficiency, effectiveness, and employability competencies of TESDA graduates in the tourism sector.

Quantitative designs were widely used in vocational and technical education research because they provided objective evidence on patterns, predictions, and structural relationships (Creswell & Creswell, 2018).

The descriptive design was employed to determine the current status of the training-related variables and employability outcomes of TESDA graduates. Specifically, it assessed how respondents perceived the work environment (facilities, trainer competence, and learning atmosphere), efficiency (time, trainers, and materials), effectiveness (quality, impact, and alignment), and their employability competencies. Descriptive designs were essential in providing baseline information about the characteristics of a population and variables prior to more advanced inferential analyses (Fraenkel et al., 2021). Studies in vocational education often began with descriptive profiling to establish how learning environments and training conditions were perceived by students and graduates (Garavan et al., 2021).

The correlational aspect of the study sought to establish whether significant relationships existed among the training variables and employability competencies. To achieve this, correlation coefficients were computed, specifically Pearson *r* for normally distributed data and Spearman rho for non-normal distributions. Correlational research was appropriate when the goal was to determine the strength and direction of association between variables without manipulating them (Cohen et al., 2018). In tourism and TVET research, correlational approaches were widely used to link work environment factors with graduate employability and job performance (Abdou, 2022).

Multiple regression analysis was conducted to determine the extent to which the independent variables—work environment, efficiency, and effectiveness—predicted the dependent variable, employability competencies. This involved analyzing beta weights, significance levels, and the explanatory power of the regression model. Regression analysis was suitable for identifying predictors of an outcome and for quantifying their relative contributions (Tabachnick & Fidell, 2019). Predictive designs were commonly applied in educational research to understand how training inputs affected graduate outcomes, including employability and competency acquisition (Heijden, 2006).

Finally, the study developed and validated a structural model using Structural Equation Modeling (SEM). SEM enabled the simultaneous examination of direct and indirect effects among the constructs, providing a comprehensive test of the proposed competency framework. Model evaluation was based on widely accepted fit indices, such as the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). SEM was considered a superior technique when the objective was to test theoretical models with latent variables, as it integrated both measurement and structural components into one unified framework (Kline, 2016; Byrne, 2016). In technical and vocational education studies, SEM was effectively used to analyze employability models and competency structures, ensuring a more robust understanding of causal mechanisms (Hair et al., 2022).

By combining descriptive, correlational, and structural modeling approaches, the study employed a multi-method quantitative design. Such an approach provided a comprehensive understanding of how training conditions and delivery factors influenced the employability competencies of TESDA graduates. This design was particularly suited to evaluating program effectiveness in the tourism sector and offered empirical evidence that informed TESDA policies, curriculum review, and institutional improvements in technical and vocational education.

Participants and Sampling Procedure

The participants of this study consisted of TESDA graduates from the tourism sector in the Caraga Region, specifically those who had completed National Certificate (NC) II or higher programs in qualifications such as Barista, Bartending, Cookery, Bread and Pastry Production, Housekeeping, Food and Beverage Services, Front Office Services, and Events Management Services. To provide triangulation of data, the study also solicited insights from trainers and program administrators, particularly during instrument validation and contextual analysis.

The target population comprised graduates from selected TESDA-accredited institutions in the Caraga Region that offered tourism-related programs. The minimum required sample size was determined using the Raosoft sample size calculator (Raosoft, Inc., 2004) at a 95% confidence level and a 5% margin of error.

To ensure adequate representation, the study adopted a stratified random sampling technique. Stratification was based on province and program type, thereby reflecting the diversity of training contexts in technical and vocational education. Within each stratum, participants were randomly selected from available TESDA tracer lists, alumni records, or through coordination with institutional registrars and placement offices. This approach reduced selection bias while ensuring that the final sample reflected the heterogeneity of the target population (Creswell & Creswell, 2018).

Both online and offline data collection strategies were implemented to maximize participation. Graduates with internet access were reached through online surveys disseminated via institutional email networks and official social media platforms, while paper-based questionnaires were distributed in areas with limited connectivity. Participation was voluntary, with informed consent obtained prior to survey administration. Confidentiality and anonymity were strictly maintained to safeguard participants' rights and encouraged candid responses.

Table 1 Distribution of the Respondents of the Study by Institutions of Caraga Region

Institution	Location/ Provinces	Tourism-Related TESDA Programs
Provincial Training Center (PTC-ADN)	Cabadbaran City Agusan del Norte	Bread and PastryNC II, Cookery NC II
Butuan Doctors College (BDC)	Butuan City Agusan del Norte	Barista NC II, Bartending NC II, Housekeeping NC II & III,Food and Beverage Services NC II & III
Northern Mindanao School of Fisheries (NMSF)	Buenavista, Agusan del Norte	Barista NC II, Food & Beverage NC II
Philippine Electronic and Communication Institute of Technology (PECIT)	Butuan City Agusan del Norte	Housekeeping NC II, FBS NC II, Cookery NC II, Bread and Pastry NC II
Saint Michael College of Caraga (SMCC)	Nasipit Agusan del Norte	Housekeeping NC II, FBS NC II, Events Management NC II, Bread and Pastry NC II
Agusan del Sur College (ADSCO)	Bayugan CityAgusan del Sur	Housekeeping NC II, FBS NC II, Front Office NC II, Cookery NC II, Bread and Pastry NC II
Saint Therese College (STC)	Tandag City Surigao del Sur	Housekeeping NC II, FBS NC II
Surigao Norte College of Arts and Trade (SNCAT)	Magpayang, Surigao del Norte	FBS NC II, Cookery NC II, Bread and Pastry NC II
Don Ecleo Colleges (DEC)	Dinagat Island	FBS NC II, Cookery NC II

These institutions collectively represented the key training settings where TESDA graduates in the tourism sector were found and assessed. They offered relevant tourism NC II training programs and embodied institutional diversity—spanning public, provincial, regional, and private providers.

Table 2 Distribution of the Respondents of the Study by Province

Stratum Size (ns)	Number of Population in Strata (N)	Strata Sample Size (n)
Agusan del Norte	325	321
Agusan del Sur	125	69
Surigao del Norte	75	5
Surigao del Sur	75	2
Dinagat Island	50	3
Total	**650**	**400**

Research Instrument

The study utilized a researcher-structured survey questionnaire as the primary data-gathering tool to measure the constructs of work environment, efficiency, effectiveness, and competencies, employability of TESDA graduates in the tourism sector.

A structured survey instrument was deemed appropriate for quantitative research because it allowed standardized data collection across a large sample and facilitated statistical analysis, particularly for correlational, predictive, and structural equation modeling (Creswell & Creswell, 2018).

All constructs were measured using a five-point Likert scale. This scale was selected because it was widely used in educational and employability studies for its simplicity, reliability, and ability to capture perceptions quantitatively (Joshi et al., 2015).

Table 3 Scoring procedure used in the study

Responses	Range	Verbal Description	Interpretation
5	4.51 – 5.00	Strongly Agree	Very High
4	3.51 – 4.50	Agree	High
3	2.51 – 3.50	Neutral	Moderate
2	1.51 – 2.50	Disagree	Low
1	1.00 – 1.50	Strongly Disagree	Very Low

Validity and Reliability of the Instruments

To ensure content validity, the instrument underwent expert evaluation by at least three specialists in tourism education and TVET program delivery. Their feedback guided revisions for clarity, relevance, and alignment with TESDA competency standards. A pilot test was conducted with 30–50 graduates who were not included in the main study to refine wording and establish preliminary reliability. Internal consistency reliability was assessed using Cronbach's alpha, with a coefficient of .70 or higher considered acceptable (Tavakol & Dennick, 2011). In the main study, construct validity was confirmed through Confirmatory Factor Analysis (CFA) as part of the Structural Equation Modeling (SEM) procedure.

The use of a self-administered questionnaire was deemed appropriate for this study because it allowed respondents to reflect on their own training experiences and employment outcomes. This approach was consistent with previous research on employability measurement and competency-based training evaluation (Llinares-Insa et al., 2018).

The instruments used in this study underwent psychometric evaluation to ensure reliability and validity. Table 5 presented the summary of Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) for each construct. Results indicated that all scales exceeded the recommended threshold values. Specifically, Cronbach's alpha values ranged from .85 to .91, demonstrating strong internal consistency across the constructs (Tavakol & Dennick, 2011).

The CR values ranged from .87 to .93, surpassing the minimum criterion of .70, which indicated that the indicators consistently represented their underlying latent variables (Hair et al., 2022). Similarly, the AVE values ranged from .61 to .70, exceeding the benchmark of .50 and thereby confirming adequate convergent validity. This implied that more than 50% of the variance in each construct was explained by its respective indicators.

Overall, the results established that the measurement model was both reliable and valid. The constructs—work environment, efficiency, effectiveness, employability, and competency—were psychometrically sound and suitable for use in subsequent correlational, regression, and structural equation modeling analyses. These findings provided a strong foundation for testing the proposed structural relationships in the study.

The results of the pilot testing demonstrate very high internal consistency across all constructs, with most Cronbach's alpha values exceeding 0.90, indicating excellent reliability. The majority of the corrected item–total correlations are well above the acceptable threshold, confirming that the items are appropriate indicators of their respective constructs. These findings confirm that the measurement instruments used in the study are reliable and suitable for assessing work environment, competencies, and employability among TESDA graduates in the tourism sector. The strong reliability results also provide support for the subsequent Structural Equation Modeling (SEM) analysis, as reliable constructs are essential for establishing valid relationships among variables in the structural model.

Data Gathering Procedure

The data gathering procedure of this study was systematically designed to ensure ethical compliance, methodological rigor, and the integrity of the data collected. Prior to data collection, formal approval was sought from the research adviser, thesis panel, and the institutional research ethics committee. A letter of request to conduct the study was prepared and endorsed to the Technical Education and Skills Development Authority (TESDA) Caraga Regional Office, as well as to the administrators of selected TESDA-accredited institutions offering tourism-related programs. These institutions included Provincial Training Center – Agusan del Norte, Butuan Doctors College, Northern Mindanao School of Fisheries, Philippine Electronic and Communication Institute of Technology, Saint Michael College of Caraga, Agusan del Sur College, Saint Therese College, Surigao Norte College of Agriculture Technology, and Don Ecleo Colleges. Approval and coordination with institutional heads ensured access to graduates and smooth facilitation of the research process.

Upon receiving clearance, the researcher coordinated with institutional representatives to identify and contact the target respondents—TESDA graduates from tourism-related programs. Graduates were approached through official alumni records, institutional linkages, and available communication channels, such as email, social media groups, and local alumni networks. An online and paper-based survey was administered to increase accessibility and participation. For graduates located in remote areas or unable to attend in-person sessions, electronic survey forms using Google Forms were disseminated to ensure inclusivity.

Informed consent was obtained from all participants before administering the research instrument. The consent form explained the objectives of the study, voluntary participation, anonymity, confidentiality of responses, and the right to withdraw at any point without repercussions. This was in accordance with ethical research principles outlined by Creswell and Creswell (2018). Respondents were assured that the data collected would be used exclusively for academic purposes and would be reported in aggregate form, with no identifying details disclosed.

The standardized research instrument, which included scales measuring work environment, efficiency, effectiveness, competency, and employability was distributed to participants. Respondents were given sufficient

time (approximately 20–30 minutes) to complete the questionnaire. The researcher, along with designated institutional focal persons, facilitated the administration of the survey to address clarifications and ensure compliance with instructions. For online submissions, built-in checks were included to avoid incomplete responses.

After the collection phase, all responses were screened, encoded, and organized in preparation for statistical analysis. Data were examined for missing values, outliers, and inconsistencies. Valid responses were consolidated into a single dataset, which served as the basis for descriptive statistics, correlation, regression, and structural equation modeling (SEM). The systematic implementation of the data gathering procedure ensured the reliability and validity of the collected data and provided a sound foundation for the subsequent analysis of the proposed structural model.

Statistical Techniques

The statistical treatment of data in this study was designed to address the research objectives and test the hypothesized structural model. Descriptive and inferential statistical techniques were employed to provide a comprehensive analysis of the constructs under investigation.

The application of statistical techniques in this study was intended to systematically analyze the relationships among the variables of work environment, efficiency, effectiveness, and employability of TESDA graduates in the tourism sector.

First, descriptive statistics were utilized to summarize and analyze the responses of the participants, the study employed descriptive statistical techniques, particularly the mean and standard deviation, to summarize and interpret the data gathered from the survey questionnaire. The mean was used to determine the average level of responses of the respondents for each indicator and variable in the study. It represents the central tendency of the data and provides an overall measure of how respondents evaluated each item related to the work environment, competencies, and employability of TESDA graduates. According to Field (2022), the mean is the most commonly used measure of central tendency in quantitative research because it provides a simple and informative summary of the data distribution. In the context of this study, the computed mean values were used to determine the level of perception of respondents regarding the different constructs, such as facilities and equipment, trainer competence, learning atmosphere, time utilization, training quality, and competencies. Higher mean values indicate stronger agreement or higher perceived levels of the constructs being measured.

The standard deviation was used to determine the extent of variability or dispersion of responses around the mean. It indicates how closely the responses of the participants are clustered around the average value. A low standard deviation suggests that respondents' answers are closely concentrated around the mean, indicating a high level of agreement among respondents. Conversely, a high standard deviation indicates greater variability in responses, suggesting that participants have differing perceptions regarding the measured construct.

According to Hair Jr. et al., (2022), the standard deviation is an important measure of dispersion that helps researchers understand the consistency and spread of responses in survey research. When the standard deviation is small, it indicates that the data points are closely clustered around the mean, suggesting consistent responses among participants. Similarly, Tabachnick & Fidell (2023) emphasized that examining both the mean and standard deviation provides a clearer understanding of the distribution and variability of data in behavioral and social science research.

Second, correlation analysis was employed to examine the relationships among the independent variables (work environment, efficiency, and effectiveness) and the dependent variables (employability and competency). Pearson *r* correlation coefficients were used for normally distributed data, while Spearman rho was applied for non-normally distributed data, following the recommendations of Field (2018). The correlation analysis allowed the researcher to determine the strength and direction of linear associations among the variables.

Third, multiple regression analysis was conducted to identify the extent to which work environment, efficiency, and effectiveness predicted employability and competency. Beta weights, coefficients of determination (R^2), and significance levels were examined to quantify the predictive power of the independent variables. This method was appropriate for determining the relative contribution of each predictor variable in explaining variance in employability and competency outcomes (Tabachnick & Fidell, 2019).

Finally, structural equation modeling (SEM**)** using IBM SPSS AMOS was employed to test the hypothesized structural model of the study. SEM enables the simultaneous assessment of both direct and indirect relationships among latent constructs while accounting for measurement error, making it a powerful multivariate technique for theory testing (Kline, 2023; Byrne, 2016). Model fit was evaluated using several goodness-of-fit indices, including the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). These indices are widely recommended in SEM to determine whether the hypothesized model adequately represents the observed data (Kline, 2023; Dan & Maydeu-Olivares, 2020). A good model fit is typically indicated when CFI and TLI values exceed 0.90, RMSEA values are below 0.08, and SRMR values are below 0.08. These threshold values follow the recommendations and are further supported by more recent SEM literature (Kline, 2023; Brown, 2015). SEM was particularly appropriate for this study, as it allowed the validation of the proposed causal pathways and facilitated the development of a comprehensive model of TESDA graduates' employability and competency in the tourism sector.

Together, these statistical techniques ensured a rigorous and multidimensional analysis, enabling the study to move beyond descriptive insights toward predictive and explanatory modeling of the factors influencing graduate employability and competency.

Presentation, Analysis, And Interpretation Of Data

This chapter presented the results of the data gathered in the study titled "Work Environment, Efficiency, Effectiveness, and Employability: A Structural Model on Competencies of TESDA Graduates in the Tourism Sector." The purpose of this chapter was to systematically present, analyze, and interpret the empirical findings based on the responses collected from the selected respondents. The analysis aimed to determine the relationships among the variables and to test the hypotheses formulated in the study.

The presentation of data followed a logical sequence aligned with the research objectives and the statement of the problem. The results were organized into tables and were analyzed using appropriate statistical tools to ensure clarity and accuracy in the interpretation of the findings. Descriptive statistics were utilized to summarize the respondents' perceptions regarding the work environment, efficiency, effectiveness, and competency. Furthermore, inferential statistical techniques such as correlation and regression analysis were employed to determine the significant relationships and predictive influence among the variables of the study.

Specifically, the chapter examined the extent to which the work environment influenced the efficiency and effectiveness of TESDA graduates in the tourism sector and how these factors contributed to their employability. The results were interpreted in relation to existing theories and related literature to provide a deeper understanding of the findings.

Overall, this chapter served as the empirical foundation of the study, providing evidence that supported the acceptance or rejection of the hypotheses and offered insights into the structural relationships among work environment, efficiency, effectiveness, competency, and employability of TESDA graduates in the tourism industry.

Problem 1. What is the level of work environment in terms of:

1.1 Facilities and equipment;

1.2 Trainer competence; and

1.3 Learning atmosphere?

Table 4 Level of Work Environment in terms of Facilities and Equipment

Indicators	M	SD	Description	Interpretation
1. The training facility was well-equipped and conducive to learning.	4.49	0.65	Agree	High
2. Training tools and equipment were updated and functional.	4.42	0.64	Agree	High
3. Materials were sufficient for all trainees.	4.38	0.72	Agree	High
4. Classrooms and laboratories were well-maintained.	4.40	0.71	Agree	High
5. Practical facilities simulated real workplace settings.	4.44	0.65	Agree	High
6. Safety standards were observed in training facilities.	4.48	0.66	Agree	High
7. Technology (computers, projectors) supported learning.	4.44	0.65	Agree	High
8. Training spaces were comfortable and safe.	4.42	0.70	Agree	High
9. Facilities supported both theory and practice.	4.41	0.66	Agree	High
10. Overall, the facilities enhanced training quality.	4.49	0.64	Agree	High
Composite Mean	**4.44**	**0.58**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 4 presented the level of work environment in terms of facilities and equipment. The results revealed a composite mean of 4.44 with a standard deviation of 0.58, described as Agree and interpreted as High. This indicated that the respondents generally perceived that the facilities and equipment provided in the training environment were adequate and supportive of learning and training activities. Such interpretation of mean scores and variability is consistent with the recommendations of Hair Jr. et al. (2022), who emphasized that mean values reflect the central tendency of responses while standard deviation indicates the consistency of participants' perceptions. Similarly, Tabachnick & Fidell (2023) noted that combining mean and standard deviation provides a clearer understanding of data distribution and response agreement in behavioral and social science research.

The two indicators with the highest mean scores were indicator 1, "The training facility was well-equipped and conducive to learning" (M = 4.49), and indicator 10, "Overall, the facilities enhanced training quality" (M = 4.49). These findings suggested that respondents strongly recognized that the availability of appropriate facilities and equipment contributed significantly to a conducive learning environment and enhanced the overall quality

of training. Well-equipped facilities enabled trainees to perform learning tasks effectively and supported the development of their practical skills.

Meanwhile, the two indicators with the lowest mean scores were indicator 3, "Materials were sufficient for all trainees" (M = 4.38), and indicator 4, "Classrooms and laboratories were well-maintained" (M = 4.40). Although these indicators obtained relatively lower mean values compared with the others, they were still described as Agree and interpreted as High. This implied that respondents generally remained satisfied with the availability of materials and the condition of classrooms and laboratories, although slight improvements in these areas could have further enhanced the training environment.

Overall, the results indicated that the work environment in terms of facilities and equipment was at a high level. The presence of well-maintained training spaces, functional tools, sufficient materials, and supportive technology contributed positively to the effectiveness of training and helped create an environment that promoted meaningful learning and skill development.

The findings aligned with literature emphasizing the significance of learning environment and facility quality in vocational and technical education. Noe (2020**)** highlighted that hands-on practice and access to updated tools improved learning retention and practical skill mastery. OECD (2019) and UNESCO-UNEVOC (2021) noted that safe, well-equipped, and realistic training facilities enhanced student engagement and readiness for the workforce. Salas et al. (2012) similarly stressed that the presence of functional technology and simulation-based environments directly supported skill acquisition, efficiency, and competence.

Table 5 Level of Work Environment in terms of Trainer Competence

Indicators	**M**	**SD**	**Description**	**Interpretation**
1. Trainers demonstrated strong knowledge in their field.	4.50	0.64	Agree	High
2. Trainers applied practical expertise in tourism services.	4.48	0.64	Agree	High
3. Trainers explained lessons clearly and effectively.	4.44	0.69	Agree	High
4. Trainers used real-world examples in teaching.	4.48	0.64	Agree	High
5. Trainers provided constructive feedback.	4.43	0.67	Agree	High
6. Trainers encouraged active trainee participation.	4.46	0.66	Agree	High
7. Trainers assessed competencies effectively.	4.43	0.66	Agree	High
8. Trainers continuously updated their skills.	4.48	0.65	Agree	High
9. Trainers demonstrated professionalism and ethics.	4.47	0.68	Agree	High
10. Overall, trainers were highly competent.	4.49	0.65	Agree	High
Composite Mean	**4.47**	**0.59**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High

3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 5 presented the level of work environment in terms of trainer competence. The results revealed a composite mean of 4.47 with a standard deviation of 0.59, described as Agree and interpreted as High. This indicated that the respondents generally perceived that the trainers possessed the necessary knowledge, skills, and competencies required to effectively facilitate training and support learning. This finding is supported by Organisation for Economic Co-operation and Development (2022), which emphasized that vocational trainers must demonstrate both strong technical expertise and pedagogical competence to deliver effective training outcomes.

The two indicators with the highest mean scores were indicator 1, "Trainers demonstrated strong knowledge in their field" (M = 4.50), and indicator 10, "Overall, trainers were highly competent" (M = 4.49). These findings suggested that respondents recognized the trainers' mastery of subject matter and their overall capability in delivering training effectively. Trainers who possessed strong knowledge and competence were essential in ensuring that trainees received accurate information and meaningful learning experiences, as highlighted by Diao (2023), who noted that trainer competence significantly influences instructional quality and learner outcomes. Similarly, Antera (2023) found that continuous professional development enhances trainers' competence and improves learner satisfaction and training effectiveness.

Meanwhile, the two indicators with the lowest mean scores were indicator 5, "Trainers provided constructive feedback" (M = 4.43), and indicator 7, "Trainers assessed competencies effectively" (M = 4.43). Although these indicators obtained relatively lower mean scores compared with the others, they were still described as Agree and interpreted as High. This implied that respondents generally perceived the trainers as effective in providing feedback and assessing competencies, though there remained opportunities to further enhance these aspects of instruction. This finding aligns with Hattie & Timperley (2007), who emphasized that effective feedback is a critical factor in improving learner performance, and with Boud & Molloy (2013), who highlighted that well-designed assessment practices are essential in developing competency and supporting continuous learning.

Overall, the findings indicated that the work environment in terms of trainer competence was at a high level. Trainers played a vital role in the success of training programs by applying their expertise, encouraging active participation, and maintaining professionalism. Their competence contributed significantly to improving the quality of training and ensuring that trainees developed the knowledge and skills necessary for their future professional practice.

The findings aligned with research emphasizing the role of trainer competence in vocational and technical education. Noe (2020) emphasized that instructors' expertise and ability to apply real-world knowledge enhanced learners' skill acquisition and self-efficacy. OECD (2019) and UNESCO-UNEVOC (2021) highlighted that highly competent trainers who continuously updated their skills and integrated practical scenarios into teaching significantly improved both learning outcomes and employability. Salas et al. (2012) also argued that effective feedback, assessment, and active learner engagement were critical components of successful

Table 6 Level of Work Environment in terms of Learning Atmosphere

Indicators	M	SD	Description	Interpretation
1. The learning atmosphere was supportive and motivating.	4.44	0.66	Agree	High
2. Trainees felt respected and valued.	4.45	0.67	Agree	High
3. Collaboration among trainees was encouraged.	4.44	0.66	Agree	High

4. The environment promoted enjoyable learning.	4.41	0.70	Agree	High
5. Open communication was encouraged.	4.44	0.68	Agree	High
6. Diversity and inclusivity were observed.	4.42	0.68	Agree	High
7. The atmosphere encouraged critical thinking.	4.41	0.66	Agree	High
8. Trainers and trainees had positive relationships.	4.40	0.72	Agree	High
9. Healthy competition motivated learning.	4.46	0.68	Agree	High
10. Overall, the atmosphere supported effective learning.	4.46	0.66	Agree	High
Composite Mean	**4.43**	**0.61**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 6 presented the level of work environment in terms of learning atmosphere. The results showed a composite mean of 4.43 with a standard deviation of 0.61, described as Agree and interpreted as High. This indicated that respondents generally perceived the learning atmosphere as supportive and conducive to effective training and learning experiences. Positive learning environments have been shown to enhance engagement, motivation, and skill acquisition among learners (Salas et al., 2012; Ruijuan, 2024).

The two indicators with the highest mean scores were indicator 9, “Healthy competition motivated learning” (M = 4.46), and indicator 10, “Overall, the atmosphere supported effective learning” (M = 4.46). These findings suggested that respondents recognized that a positive and motivating atmosphere encouraged trainees to perform better and engage more actively in the learning process. A learning environment that promoted healthy competition and supported learning enhanced motivation and participation among trainees (Seyitoğlu, 2022; Molloy, 2024).

Meanwhile, the two indicators with the lowest mean scores were indicator 8, “Trainers and trainees had positive relationships” (M = 4.40), and indicator 4, “The environment promoted enjoyable learning” (M = 4.41). Although these indicators obtained slightly lower mean scores compared with the others, they were still described as *Agree* and interpreted as *High*. This implied that respondents generally perceived the relationships between trainers and trainees as positive and the learning environment as enjoyable, although further improvements in these areas could have strengthened the overall training atmosphere (Closs et al., 2021; Kassab et al., 2024).

Overall, the findings indicated that the work environment in terms of learning atmosphere was at a high level. A supportive and motivating learning atmosphere that encouraged communication, collaboration, and critical thinking contributed significantly to effective training and promoted meaningful learning among trainees.

The results aligned with studies highlighting the importance of learning environments in vocational education and training (VET). OECD (2019) noted that inclusive, collaborative, and psychologically safe learning environments enhanced learner engagement and knowledge retention. Noe (2020) emphasized that supportive atmospheres and active participation opportunities improved motivation, cognitive development, and professional readiness. Salas et al. (2012) argued that environments promoting critical thinking, communication, and teamwork were essential for developing holistic competencies, while UNESCO-UNEVOC (2021) stressed that learning climates aligned with workplace realities enhanced employability and adaptability.

Table 7 Summary of the Levels of Work Environment

Sub-variables	**M**	**SD**	**Description**	**Interpretation**
Facilities and equipment	**4.44**	**0.58**	Agree	High
Trainer competence	**4.47**	**0.59**	Agree	High
Learning atmosphere	**4.43**	**0.61**	Agree	High
Overall Mean	**4.45**	**0.59**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 7 presented the summary of the levels of work environment across the three sub-variables. The results showed an overall mean of 4.45 with a standard deviation of 0.59, described as Agree and interpreted as High. This indicated that the respondents generally perceived the overall work environment as favorable and supportive of effective training and learning. Positive work environments have been shown to enhance learner engagement, motivation, and skill acquisition (Salas et al., 2012; Ruijuan, 2024).

Among the sub-variables, the highest mean score was obtained by trainer competence with a mean of 4.47 (SD = 0.59), followed by facilities and equipment with a mean of 4.44 (SD = 0.58). These findings suggested that respondents highly recognized the competence and expertise of trainers, as well as the adequacy of facilities and equipment in supporting the training process. Trainer competence has been consistently linked to improved instructional quality, learner satisfaction, and employability outcomes (Diao, 2023; Antera, 2023), while well-resourced facilities and equipment positively influence learning efficiency and practical skill development (OECD, 2022; Bas & Yildiz, 2020). Competent trainers played a crucial role in facilitating learning, guiding trainees, and ensuring that knowledge and skills were effectively transferred during training activities. Studies emphasized that trainer expertise and instructional competence significantly influenced learner engagement and training outcomes (Salas et al., 2019; Noe et al., 2020).

On the other hand, the sub-variable with the lowest mean score was learning atmosphere with a mean of 4.43 (SD = 0.61). Although it obtained the lowest rating among the three variables, it was still described as Agree and

interpreted as High. This indicated that respondents perceived the learning atmosphere as supportive and conducive to learning, though there remained opportunities to further strengthen the environment to enhance trainee engagement and interaction. A positive and inclusive learning atmosphere encouraged collaboration, motivation, and critical thinking, which were essential for effective training and learning experiences (OECD, 2021).

Overall, the findings revealed that all aspects of the work environment, including facilities and equipment, trainer competence, and learning atmosphere, were rated at a high level. This implied that the training environment generally provided adequate resources, competent trainers, and a supportive atmosphere that collectively contributed to effective learning and skill development among trainees. Previous studies highlighted that a well-supported learning environment that integrated quality facilities, competent trainers, and a positive atmosphere significantly enhanced the effectiveness of training programs and learner performance (UNESCO, 2022).

Problem 2 What is the level of efficiency in terms of:

2.1 Time utilization;

2.2 Trainer availability and management; and

2.3 Use of instructional materials?

Table 8 Level of Respondnets' Efficiency in terms of Time Utilization

Indicators	M	SD	Description	Interpretation
1. Training sessions started and ended on time.	4.44	0.69	Agree	High
2. Time allocation per topic was sufficient.	4.37	0.72	Agree	High
3. Practical activities had enough time for mastery.	4.40	0.69	Agree	High
4. No significant time was wasted in training.	4.37	0.68	Agree	High
5. Pacing of sessions was appropriate.	4.38	0.68	Agree	High
6. Breaks were scheduled appropriately.	4.36	0.70	Agree	High
7. The training adhered to the planned calendar.	4.40	0.67	Agree	High
8. Group tasks were completed on time.	4.40	0.70	Agree	High
9. Time for assessments was properly managed.	4.46	0.69	Agree	High
10. Overall, time was utilized effectively.	4.45	0.67	Agree	High
Composite Mean	**4.40**	**0.61**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High

3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 8 presented the level of respondents' efficiency in terms of time utilization during training. The results revealed a composite mean of 4.40 with a standard deviation of 0.61, described as Agree and interpreted as High. This indicated that respondents generally perceived that time was managed effectively throughout the training sessions, allowing for proper pacing, sufficient coverage of topics, and completion of activities within the allocated schedule. Effective time management has been shown to improve learning outcomes, skill acquisition, and overall trainee performance in vocational and hospitality education contexts (Harris & Brophy, 2020; Makaremi, 2024).

The two indicators with the highest mean scores were indicator 9, "Time for assessments was properly managed" (M = 4.46), and indicator 10, "Overall, time was utilized effectively" (M = 4.45). These findings suggested that respondents strongly recognized that assessment activities were well-planned and that the overall time management during the training contributed to productive learning outcomes. Structured time allocation for assessments and training sessions allows trainees to engage fully without feeling rushed, enhancing comprehension and practical skill mastery (Mora & Lane, 2019).

Meanwhile, the two indicators with the lowest mean scores were indicator 6, "Breaks were scheduled appropriately" (M = 4.36), and indicator 2, "Time allocation per topic was sufficient" (M = 4.37). Although these indicators received slightly lower scores compared to the others, they were still described as *Agree* and interpreted as *High*. This implied that respondents generally remained satisfied with the scheduling of breaks and the distribution of time per topic, though minor adjustments could have further optimized trainees' focus and engagement during sessions (Alam & Ahmad, 2021; UNESCO, 2021).

Overall, the findings indicated that the respondents' efficiency in utilizing time during training sessions was at a high level. Proper planning, adherence to schedules, and effective pacing contributed to maximizing learning opportunities and ensured that trainees were able to achieve the intended outcomes of the program. Proper time utilization not only supported learning efficiency but also prepared trainees to manage time effectively in real workplace settings.

These findings aligned with research highlighting the role of time management in effective training delivery. Noe (2020) emphasized that structured scheduling and adherence to planned timelines increased learning efficiency and reduced cognitive overload. OECD (2019) noted that time utilization was a critical factor in vocational education, as it ensured adequate exposure to both theory and practical skills. Salas et al. (2012) similarly pointed out that proper pacing, time allocation, and scheduling of breaks enhanced trainee performance, motivation, and competency acquisition.

Table 9 Level of Respondnets' Efficiency in terms of Trainer availability and management

Indicators	M	SD	Description	Interpretation
1. Trainers were available when needed.	4.39	0.71	Agree	High
2. Trainers managed sessions effectively.	4.41	0.67	Agree	High
3. Trainers were punctual.	4.40	0.68	Agree	High
4. Trainers ensured topics were fully covered.	4.41	0.70	Agree	High
5. Trainers provided timely feedback.	4.41	0.68	Agree	High
6. Trainers managed group activities well.	4.43	0.66	Agree	High
7. Trainers were approachable outside class hours.	4.43	0.68	Agree	High
8. Trainers responded to trainee concerns promptly.	4.41	0.67	Agree	High

9. Trainers ensured equal attention to trainees.	4.41	0.70	Agree	High
10. Overall, trainer management was effective.	4.43	0.71	Agree	High
Composite Mean	**4.41**	**0.62**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 9 presented the level of respondents' efficiency in terms of trainer availability and management. The results revealed a composite mean of 4.41 with a standard deviation of 0.62, described as Agree and interpreted as High. This indicated that respondents generally perceived that trainers were available, responsive, and effectively managed the training sessions, contributing to a well-organized learning experience. Trainer availability and sound management are critical factors in ensuring continuity and quality in vocational education and training (OECD, 2022; UNESCO, 2021).

The two indicators with the highest mean scores were indicator 6, "Trainers managed group activities well" (M = 4.43), and indicator 7, "Trainers were approachable outside class hours" (M = 4.43). These findings suggested that respondents recognized the trainers' ability to facilitate collaborative learning and provide support beyond scheduled sessions, thereby enhancing trainee engagement and satisfaction. Effective management of group activities ensures that tasks are completed efficiently and that all trainees have opportunities to participate actively (Mitre Cotta et al., 2024; Busso et al., 2023).

Meanwhile, the two indicators with the lowest mean scores were indicator 1, "Trainers were available when needed" (M = 4.39), and indicator 3, "Trainers were punctual" (M = 4.40). Although these indicators obtained slightly lower mean scores compared to the others, they were still described as Agree and interpreted as High. This implied that trainees generally felt supported and that trainers maintained punctuality, although minor improvements in availability and time management could have further strengthened session efficiency (Antera, 2023; ADB, 2020).

Overall, the findings indicated that trainer availability and management during training sessions were at a high level. Trainers who were approachable, responsive, and capable of managing sessions effectively contributed significantly to a productive learning environment. Their availability, guidance, and structured management ensured that training objectives were met and that trainees could maximize learning opportunities.

The results of the study were supported by previous literature highlighting the important role of trainers in facilitating effective learning outcomes. According to Noe (2020), trainers who effectively managed instructional activities, provided clear guidance, and offered timely feedback significantly enhanced trainee engagement and knowledge retention. Similarly, Smith-Jentsch et al., (2012) emphasized that trainer facilitation skills, including the ability to manage learning interactions and encourage participation, were key determinants of successful training outcomes and skill transfer.

Table 10 Level Of Respondnets' Efficiency In Terms Of Use Of Instructional Materials

Indicators	M	SD	Description	Interpretation
1. Materials were updated and relevant.	4.43	0.69	Agree	High
2. Instructional materials were easy to understand.	4.41	0.67	Agree	High
3. Modules were comprehensive.	4.35	0.69	Agree	High
4. Multimedia resources enriched learning.	4.39	0.67	Agree	High
5. Manuals supported hands-on training.	4.43	0.67	Agree	High
6. Digital resources were accessible.	4.36	0.70	Agree	High
7. Materials supported both theory and practice.	4.42	0.66	Agree	High
8. Materials were distributed on time.	4.35	0.69	Agree	High
9. Instructional materials improved my learning.	4.38	0.68	Agree	High
10. Overall, instructional materials enhanced training quality.	4.41	0.68	Agree	High
Composite Mean	**4.39**	**0.61**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 10 presented the level of respondents' efficiency in terms of the use of instructional materials. The results revealed a composite mean of 4.39 with a standard deviation of 0.61, described as Agree and interpreted as High. This indicated that the respondents generally perceived the instructional materials provided during training as relevant, accessible, and effective in supporting both learning and practical skill development. The use of high-quality instructional materials has been shown to improve learner engagement, comprehension, and skill mastery, particularly in competency-based vocational training (Rusticus et al., 2022; Dai, 2023; Kassab et al., 2024).

The two indicators with the highest mean scores were indicator 1, "Materials were updated and relevant" (M = 4.43), and indicator 5, "Manuals supported hands-on training" (M = 4.43). These findings suggested that the respondents recognized the value of current and practical materials that enhanced understanding and provided direct support for hands-on activities. Up-to-date and relevant materials are essential for helping trainees acquire knowledge efficiently and apply it in practical scenarios (UNESCO, 2021; Makaremi, 2024).

Meanwhile, the two indicators with the lowest mean scores were indicator 3, "Modules were comprehensive" (M = 4.35), and indicator 8, "Materials were distributed on time" (M = 4.35). Although these indicators obtained slightly lower mean scores compared to the others, they were still described as Agree and interpreted as High. This implied that the respondents were generally satisfied with the quality and timely distribution of instructional materials, although slight improvements in module comprehensiveness and material delivery could have further enhanced training effectiveness (Joo, 2018; Uslu et al., 2021).

Overall, the findings indicated that the use of instructional materials during training was at a high level. The availability of updated, clear, and accessible materials supported both theoretical and practical learning, thereby contributing to an effective training experience. Well-prepared materials ensured that trainees could follow lessons efficiently, participate in activities confidently, and achieve the intended learning outcomes.

The findings of the study were consistent with existing literature emphasizing the importance of instructional materials in enhancing learning effectiveness and training outcomes. Mayer (2017) explained that well-designed instructional materials, particularly those incorporating multimedia elements, enhanced learners' cognitive engagement and improved knowledge retention by presenting information through multiple channels. Similarly, Noe (2020) emphasized that the effectiveness of training programs was strongly influenced by the quality, relevance, and accessibility of instructional resources used during instruction.

In the context of technical and vocational education and training, UNESCO-UNEVOC (2021) highlighted that updated and industry-relevant learning materials were essential for ensuring that trainees developed competencies aligned with labor market demands. Likewise, OECD (2019) noted that competency-based training systems required instructional materials that integrated theoretical knowledge with practical application to effectively prepare learners for workplace performance.

Furthermore, Salas et al. (2012) emphasized that instructional resources that supported hands-on activities, simulations, and real-world applications significantly enhanced skill acquisition and training transfer. These resources enabled learners to practice and apply competencies in controlled learning environments before performing them in actual workplace settings.

Table 11 Summary of the Levels of Respondnets' Efficiency

Sub-variables	**M**	**SD**	**Description**	**Interpretation**
Time utilization	**4.40**	**0.61**	Agree	High
Trainer availability and management	**4.41**	**0.62**	Agree	High
Use of instructional materials	**4.39**	**0.61**	Agree	High
Overall Mean	**4.40**	**0.61**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 11 presented the summary of the levels of respondents' efficiency across the three sub-variables. The results showed an overall mean of 4.40 with a standard deviation of 0.61, described as Agree and interpreted as

High. This indicated that the respondents generally perceived their efficiency during the training sessions to be at a high level, reflecting effective time management, trainer support, and the use of instructional materials. High efficiency in training has been associated with improved learner engagement, skill acquisition, and productivity (Salas et al., 2019; Noe, 2020).

Among the sub-variables, the highest mean score was obtained by trainer availability and management with a mean of 4.41 (SD = 0.62), followed closely by time utilization with a mean of 4.40 (SD = 0.61). These findings suggested that the respondents recognized the trainers' ability to manage sessions effectively, provide timely feedback, and remain accessible to trainees. Efficient trainer management contributes to smooth session flow, ensures that topics are fully covered, and fosters a supportive learning environment (Busso et al., 2023; Cotta et al., 2024). Research highlights that trainer accessibility and active engagement positively affect learner participation and overall training effectiveness (Noe, 2020; Salas et al., 2019).

The sub-variable with the lowest mean score was the use of instructional materials, with a mean of 4.39 (SD = 0.61). Although it received the lowest rating among the three variables, it was still described as Agree and interpreted as High. This indicated that the respondents were generally satisfied with the quality, relevance, and accessibility of instructional materials, although minor improvements in comprehensiveness or timely distribution could have further enhanced efficiency. Studies emphasize that the availability of updated and accessible instructional materials supports both theoretical understanding and practical skill development, thereby enhancing learning outcomes in vocational training contexts (OECD, 2021; UNESCO-UNEVOC, 2022; Rusticus et al., 2022).

Overall, the findings indicated that the respondents' efficiency in training was high across all sub-variables. Proper time utilization, effective trainer management, and the use of appropriate instructional materials collectively contributed to productive learning experiences. These results suggested that the training program was well-organized, allowing trainees to maximize learning opportunities and develop the intended knowledge and skills effectively. High efficiency in training promoted preparedness for real-world application and improved overall program outcomes.

Problem 3 What is the level of effectiveness in terms of:

3.1 Quality of training;

3.2 Impact on learner development; and

3.3 Alignment with tourism industry needs?

Table 12 Level of Respondnets' Effectiveness in terms of Quality of Training

Indicators	M	SD	Description	Interpretation
1. Training content was high quality.	4.43	0.67	Agree	High
2. Training objectives were clearly met.	4.43	0.64	Agree	High
3. The balance of theory and practice improved learning.	4.41	0.68	Agree	High
4. The program addressed industry standards.	4.41	0.66	Agree	High
5. Teaching methods facilitated learning effectively.	4.41	0.67	Agree	High
6. The training maintained professional standards.	4.42	0.66	Agree	High
7. Evaluation methods reflected learning outcomes.	4.42	0.66	Agree	High

8. Sessions were delivered consistently.	4.38	0.70	Agree	High
9. The program exceeded my expectations.	4.39	0.67	Agree	High
10. Overall, the training was of high quality.	4.44	0.66	Agree	High
Composite Mean	**4.42**	**0.60**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 12 presented the level of respondents' effectiveness in terms of the quality of training. The results revealed a composite mean of 4.42 with a standard deviation of 0.60, described as Agree and interpreted as High. This indicated that respondents generally perceived the training program as effective in delivering high-quality content, achieving training objectives, and providing a balanced learning experience that integrated both theory and practice. High-quality training programs in TVET enhance learner competence, confidence, and employability by ensuring content relevance and comprehensive coverage of technical and soft skills (UNESCO-UNEVOC, 2021; OECD, 2022; Barwani, 2023).

The two indicators with the highest mean scores were indicator 10, "Overall, the training was of high quality" (M = 4.44), and indicator 1, "Training content was high quality" (M = 4.43). These findings suggested that respondents strongly recognized the relevance and comprehensiveness of the training program. Well-structured content facilitates the effective application of knowledge and skills in real-world contexts, aligning with industry standards and performance expectations (Tomlinson, 2017; Joo, 2018).

Meanwhile, the two indicators with the lowest mean scores were indicator 8, "Sessions were delivered consistently" (M = 4.38), and indicator 3, "The balance of theory and practice improved learning" (M = 4.41). Although slightly lower than the other indicators, these scores were still described as Agree and interpreted as High. This suggests that while respondents were satisfied with session consistency and the integration of theory and practice, minor improvements could further enhance the sequencing and delivery of learning activities to optimize effectiveness (European Commission/Cedefop, 2020; Tomlinson, 2017).

Overall, the findings indicated that the respondents perceived the quality of training to be at a high level. Effective training programs combined clear objectives, appropriate teaching methods, professional standards, and reliable evaluation techniques to ensure that learning outcomes were achieved. A high-quality training environment promoted competence, confidence, and readiness among trainees to meet industry standards and apply skills effectively in practical settings.

The findings of the study were supported by existing literature emphasizing the importance of training quality in achieving effective learning outcomes. According to Salas et al., (2012), high-quality training programs were characterized by clear learning objectives, structured instructional methods, and systematic evaluation processes, all of which contributed to improved knowledge acquisition and skill development among trainees. Similarly,

Noe (2020) highlighted that training effectiveness depended largely on the alignment of training content, instructional strategies, and evaluation methods with learning objectives.

In the context of competency-based education and training, OECD (2019) emphasized that training programs must maintain high professional and instructional standards to ensure that learners developed competencies aligned with labor market requirements. Likewise, UNESCO-UNEVOC (2021) noted that effective vocational training programs integrated theory and practice while maintaining strong industry linkages to enhance workforce readiness.

Table 13 Level of Respondnets' Effectiveness in terms of Impact on learner development

Indicators	**M**	**SD**	**Description**	**Interpretation**
1. Training improved my confidence.	4.47	0.69	Agree	High
2. Training developed my problem-solving skills.	4.43	0.67	Agree	High
3. I became more adaptable at work.	4.42	0.65	Agree	High
4. I improved teamwork skills.	4.42	0.67	Agree	High
5. I enhanced leadership skills.	4.37	0.72	Agree	High
6. I developed decision-making skills.	4.42	0.67	Agree	High
7. My communication skills improved.	4.39	0.69	Agree	High
8. Training enhanced my professionalism.	4.43	0.67	Agree	High
9. I improved my customer service skills.	4.42	0.66	Agree	High
10. Overall, training had a positive impact on me.	4.47	0.63	Agree	High
Composite Mean	**4.42**	**0.61**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 13 presented the level of respondents' effectiveness in terms of the impact of training on learner development. The results revealed a composite mean of 4.42 with a standard deviation of 0.61, described as Agree and interpreted as High. This indicated that respondents generally perceived the training as positively influencing their personal and professional growth, including confidence, skills development, and workplace adaptability. Effective TVET programs enhance both technical and non-technical competencies, fostering

learner confidence, self-efficacy, and readiness for employment (Closs et al., 2021; Jackson, 2023; Mitre Cotta et al., 2024).

The two indicators with the highest mean scores were indicator 1, "Training improved my confidence" (M = 4.47), and indicator 10, "Overall, training had a positive impact on me" (M = 4.47). These findings suggested that respondents strongly recognized the training's contribution to boosting self-assurance and overall personal development. Confidence gained from training supports the practical application of learned skills in real workplace settings, which is essential for employability and career progression (Kerins et al., 2021; TESDA, 2024).

Meanwhile, the two indicators with the lowest mean scores were indicator 5, "I enhanced leadership skills" (M = 4.37), and indicator 7, "My communication skills improved" (M = 4.39). Although slightly lower than the other indicators, these scores were still described as Agree and interpreted as High. This implies that respondents were generally satisfied with their development in leadership and communication skills, though additional targeted training activities could further strengthen these competencies (Uslu et al., 2021; Rusticus et al., 2022).

Overall, the findings indicated that the training had a high level of positive impact on learner development. The program effectively supported skill enhancement, confidence building, teamwork, decision-making, and professionalism. These outcomes **s**uggested that the training contributed to preparing trainees for workplace demands and helped them apply learned skills effectively in their professional practice.

The findings of the study aligned with prior research emphasizing the role of training in competency development. Noe (2020) highlighted that structured training programs improved employee skills, confidence, and adaptability, which led to higher work performance and employability. Similarly, Salas et al. (2012) noted that training interventions that integrated practical exercises, simulations, and feedback significantly enhanced learners' problem-solving, decision-making, and teamwork skills.

In the context of Technical and Vocational Education and Training (TVET), OECD (2019) emphasized that individual development was strengthened when training programs provided opportunities for hands-on learning, critical thinking, and soft skill enhancement, all of which were essential for workforce readiness. Tomlinson (2017) further explained that employability depended on the accumulation of competencies—including technical, cognitive, and interpersonal skills—which training programs could significantly develop if they were effectively designed and delivered.

Table 14 Level of Respondnets' Effectiveness in terms of Alignment with tourism industry needs

Indicators	M	SD	Description	Interpretation
1. Training addressed industry standards.	4.48	0.63	Agree	High
2. Activities reflected real-world practices.	4.47	0.62	Agree	High
3. The curriculum was updated for industry changes.	4.45	0.63	Agree	High
4. Skills acquired matched job requirements.	4.47	0.62	Agree	High
5. Employers value my acquired skills.	4.44	0.66	Agree	High
6. Training strengthened industry-specific competencies.	4.46	0.65	Agree	High
7. The program prepared me for tourism careers.	4.45	0.62	Agree	High

8. Training included sustainable tourism practices.	4.47	0.63	Agree	High
9. Training prepared me for future tourism trends.	4.48	0.63	Agree	High
10. Overall, training aligned with industry needs.	4.49	0.61	Agree	High
Composite Mean	**4.47**	**0.57**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 14 presented the level of respondents' effectiveness in terms of alignment with tourism industry needs. The results revealed a composite mean of 4.47 with a standard deviation of 0.57, described as Agree and interpreted as High. This indicated that respondents generally perceived that the training program effectively aligned with industry standards, provided relevant skills, and prepared them for careers in the tourism sector. Strong alignment between TVET programs and industry requirements enhances graduate employability by ensuring that skills and knowledge are directly applicable to workplace tasks (World Bank, 2024; ILO/UNESCO-UNEVOC, 2019).

The two indicators with the highest mean scores were indicator 10, "Overall, training aligned with industry needs" (M = 4.49), and indicator 1, "Training addressed industry standards" (M = 4.48). These findings suggested that respondents strongly recognized the relevance of the training content to actual industry requirements. Training aligned with industry standards ensures that learners acquire competencies valued by employers and are better prepared to transition into the workforce (Phillips et al., 2021; Matamanda & Hove, 2022).

Meanwhile, the two indicators with the lowest mean scores were indicator 5, "Employers value my acquired skills" (M = 4.44), and indicator 3, "The curriculum was updated for industry changes" (M = 4.45). Although slightly lower than the other indicators, these scores were still described as *Agree* and interpreted as *High*. This implies that respondents generally perceived the training as relevant and updated, though minor improvements in keeping the curriculum responsive to evolving industry trends could further strengthen employability outcomes (Stangl, 2024; TESDA, 2024; Busso et al., 2023).

Overall, the findings indicated that the training program effectively addressed tourism industry needs. By providing up-to-date curricula, practical activities, sustainable practices, and competencies that matched job requirements, the program prepared trainees for professional success and equipped them to adapt to future developments in the tourism sector.

These findings were consistent with existing literature emphasizing the importance of industry-aligned training for employability. According to Noe (2020), training programs that were aligned with labor market requirements and integrated real-world tasks facilitated the development of job-relevant competencies and improved workforce readiness. The Organisation for Economic Co-operation and Development (2019) similarly

highlighted that technical and vocational education programs were most effective when curricula were continuously updated to reflect industry changes and when learning activities simulated workplace conditions.

In the context of tourism, Tomlinson (2017) emphasized that the alignment of skills and competencies with employer expectations was critical for graduate employability. Moreover, Salas et al. (2012) argued that practical, scenario-based, and industry-informed training strengthened the transfer of learning to workplace performance. The inclusion of sustainable tourism practices aligned with current industry trends, preparing graduates to respond to environmental and market challenges, a skill increasingly valued in the tourism sector (UNESCO-UNEVOC, 2021).

Table 15 Summary of the Levels of Respondnets' Effectiveness

Sub-variables	M	SD	Description	Interpretation
Quality of training	4.42	0.60	Agree	High
Impact on learner development	4.42	0.61	Agree	High
Alignment with tourism industry needs	4.47	0.57	Agree	High
Overall Mean	4.44	0.59	Agree	High

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 15 presented the summary of respondents' perceptions of the overall effectiveness of the training program across its three sub-variables. The results revealed an overall mean of 4.44 with a standard deviation of 0.59, described as Agree and interpreted as High. This indicated that respondents generally perceived the training program as effective in terms of quality, impact on learner development, and alignment with tourism industry needs. Effective TVET programs enhance learner outcomes by integrating high-quality content, structured learning experiences, and workplace-relevant skills, which collectively strengthen employability and career readiness (UNESCO-UNEVOC, 2021; OECD, 2022; Cotta et al., 2024).

Among the sub-variables, alignment with tourism industry needs obtained the highest mean score (M = 4.47, SD = 0.57), followed closely by quality of training and impact on learner development, both with a mean of 4.42. These findings suggested that respondents strongly recognized that the training program effectively prepared them for real-world tourism careers by providing relevant competencies, knowledge, and skills that met industry standards. Alignment of curricula with industry requirements has been shown to improve labor market outcomes, ensure graduates' job readiness, and allow trainees to respond to evolving sector demands (World Bank, 2024; Phillips et al., 2021; TESDA, 2024).

The sub-variables with slightly lower mean scores—quality of training and impact on learner development—were still described as Agree and interpreted as High. This indicated that respondents were satisfied with the content, objectives, methods, and overall influence of the training on their professional and personal growth.

Studies highlighted that high-quality training, including clear learning objectives and effective teaching methods, supported learner development, engagement, and skill application (Salas et al., 2019; Noe, 2020).

Overall, the findings indicated that the training program was highly effective across all measured aspects. The combination of high-quality training, positive impact on learner development, and alignment with industry needs ensured that trainees gained both the knowledge and practical skills required for success in the tourism sector. The findings emphasized that a holistic approach to training—combining high-quality instructional content, meaningful learner development, and industry alignment—maximized program effectiveness and reinforced trainees' professional competence and employability in tourism contexts (Joo, 2018; Closs et al., 2021; UNESCO, 2021).

Problem 4 What is the level of competence in terms of:

4.1 Knowledge Competence

4.2 Technical Skills Competence

4.3 Attitudinal or Behavioral Competence?

Table 16 Level of Respondnets' Competence in terms of Knowledge

Indicators	M	SD	Description	Interpretation
1. I understand the fundamental theories and concepts related to the tourism/hospitality industry.	4.47	0.62	Agree	High
2. I am knowledgeable about the standards and regulations applied in tourism operations.	4.41	0.63	Agree	High
3. I can explain the basic procedures in customer service and guest relations.	4.41	0.64	Agree	High
4. I have a good understanding of workplace safety and sanitation practices.	4.48	0.61	Agree	High
5. I can analyze and solve problems using the knowledge I acquired during my training.	4.43	0.64	Agree	High
6. I am familiar with the laws and ethical guidelines relevant to the tourism sector.	4.37	0.66	Agree	High
7. I can apply theoretical knowledge to real-life situations in the workplace.	4.44	0.62	Agree	High
8. I am aware of the latest trends and technologies used in the tourism industry.	4.42	0.64	Agree	High
9. I understand the importance of sustainability and cultural sensitivity in tourism services.	4.44	0.65	Agree	High
10. I can clearly communicate tourism-related information to clients and colleagues.	4.42	0.64	Agree	High
Composite Mean	**4.43**	**0.57**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 16 presented the level of respondents' competence in terms of knowledge. The results revealed a composite mean of 4.43 with a standard deviation of 0.57, described as *Agree* and interpreted as *High*. This indicated that respondents generally perceived themselves as having a strong understanding of the fundamental concepts, theories, and standards related to the tourism and hospitality industry. High levels of foundational knowledge have been shown to enhance vocational learners' readiness for employment by enabling sound decision-making and problem-solving in real workplace settings (Mariano & Tantoco, 2021; Rahmawati et al., 2023).

The two indicators with the highest mean scores were indicator 4, "I have a good understanding of workplace safety and sanitation practices" (M = 4.48), and indicator 1, "I understand the fundamental theories and concepts related to the tourism/hospitality industry" (M = 4.47). These findings suggested that respondents strongly recognized their grasp of essential theoretical knowledge and safety standards, which were critical for ensuring quality service delivery and compliance with industry regulations (Ge & Kim, 2024; Campo et al., 2025).

Meanwhile, the two indicators with the lowest mean scores were indicator 6, "I am familiar with the laws and ethical guidelines relevant to the tourism sector" (M = 4.37), and indicator 2, "I am knowledgeable about the standards and regulations applied in tourism operations" (M = 4.41). Although these indicators received slightly lower mean scores compared with the others, they were still described as Agree and interpreted as High. This implied that respondents generally felt competent in legal and regulatory knowledge, though ongoing training and updates might further strengthen their understanding of evolving policies and ethical practices (Punsalan et al., 2024; Omarkhanova et al., 2022).

Overall, the findings indicated that respondents' competence in knowledge was at a high level. A solid foundation in industry theories, operational standards, workplace safety, sustainability, and communication skills equipped trainees to perform effectively in professional settings. Such knowledge not only supported technical proficiency but also enhanced critical thinking, problem-solving, and the ability to apply learned concepts in real-world tourism and hospitality scenarios.

The findings aligned with prior research emphasizing the relationship between competency-based training and employability outcomes. According to Organisation for Economic Co-operation and Development, technical and vocational education programs that provided comprehensive knowledge of industry standards, practical procedures, and workplace regulations produced graduates who were better prepared for employment. Noe (2020) emphasized that applying theoretical knowledge to practical scenarios strengthened both cognitive understanding and decision-making skills, which were critical in workplace performance.

Tomlinson (2017) noted that employability depended on the development of transferable competencies—including problem-solving, communication, and adaptability—alongside technical expertise. In tourism and hospitality education, Salas et al., (2012) highlighted that training programs emphasizing applied learning, ethical awareness, and cultural sensitivity enhanced workforce readiness and professional performance. Finally, UNESCO-UNEVOC (2021) emphasized the need for up-to-date curricula aligned with industry trends, ensuring graduates possessed the knowledge and competencies valued by employers.

Table 17 Level of Respondnets' Competence in terms of Technical Skills

Indicators	M	SD	Description	Interpretation
1. I can perform the basic tasks required in my field of specialization (e.g., front office, housekeeping, tour guiding).	4.45	0.63	Agree	High
2. I am skilled in using equipment and tools relevant to my tourism job.	4.34	0.68	Agree	High
3. I can operate computer applications or reservation systems used in the tourism industry.	4.36	0.68	Agree	High
4. I can handle customer transactions accurately and efficiently.	4.37	0.67	Agree	High
5. I can provide quality service that meets or exceeds customer expectations.	4.39	0.66	Agree	High
6. I can apply standard operating procedures effectively in my workplace.	4.42	0.65	Agree	High
7. I am capable of multitasking while maintaining work quality.	4.40	0.65	Agree	High
8. I can adapt my technical skills to new tools or systems introduced in the industry.	4.39	0.65	Agree	High
9. I can identify and correct errors in performing job-related tasks.	4.39	0.65	Agree	High
10. I can complete tasks independently with minimal supervision.	4.42	0.63	Agree	High
Composite Mean	**4.39**	**0.59**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 17 presented the level of respondents' competence in terms of technical skills. The results revealed a composite mean of 4.39 with a standard deviation of 0.59, described as Agree and interpreted as High. This

indicated that respondents generally perceived themselves as competent in performing technical tasks and applying practical skills relevant to their field of specialization in the tourism industry. Technical proficiency is a key determinant of job performance and employability in tourism and hospitality contexts (Melchor et al., 2025).

The two indicators with the highest mean scores were indicator 1, "I can perform the basic tasks required in my field of specialization (e.g., front office, housekeeping, tour guiding)" (M = 4.45), and indicator 6, "I can apply standard operating procedures effectively in my workplace" (M = 4.42). These findings suggested that respondents felt confident in carrying out core technical responsibilities and adhering to established procedures, which are essential for ensuring efficiency, accuracy, and quality in service delivery (Toling et al., 2023; Sun, 2024).

Meanwhile, the two indicators with the lowest mean scores were indicator 2, "I am skilled in using equipment and tools relevant to my tourism job" (M = 4.34), and indicator 3, "I can operate computer applications or reservation systems used in the tourism industry" (M = 4.36). Although these indicators received slightly lower scores, they were still described as Agree and interpreted as High. This implied that respondents were generally competent in using technical tools and digital systems, though additional training or hands-on practice might further enhance proficiency in these areas (Rahmawati et al., 2023; Kovalev et al., 2025).

Overall, the findings **i**ndicated that respondents' competence in technical skills was at a high level. Strong technical abilities, including task performance, application of procedures, multitasking, and adaptability to new tools, were critical for effective functioning in tourism and hospitality workplaces. High technical competence enabled trainees to provide quality service, work independently, and respond efficiently to practical challenges in professional settings.

The findings aligned with research emphasizing the importance of technical skills and workplace competencies in employability. According to Raymond A. Noe (2020), practical, hands-on training strengthened learners' ability to perform job-specific tasks effectively and **fostered** autonomy in workplace performance. Organisation for Economic Co-operation and Development highlighted that TVET programs that integrated real-world operational tasks and technical tools prepared graduates to meet labor market standards and respond to evolving industry demands.

Salas et al., (2012) emphasized that training interventions emphasizing accuracy, efficiency, and problem-solving in applied tasks enhanced both technical competence and overall workplace performance. Additionally, Tomlinson (2017) noted that employability was strongly influenced by the mastery of technical and industry-specific skills, which formed the foundation for career progression and professional success. In the tourism sector, where service quality, operational efficiency, and technical proficiency were critical, these competencies ensured that graduates could perform effectively, adapt to technological changes, and deliver value to employers and clients alike.

Table 18 Level of Respondnets' Competence in terms of Attitudinal or Behavioral

Indicators	M	SD	Description	Interpretation
1. I demonstrate a positive attitude toward my work and responsibilities.	4.48	0.62	Agree	High
2. I show respect and courtesy to colleagues, supervisors, and clients.	4.47	0.63	Agree	High
3. I take initiative in performing tasks without waiting to be told.	4.44	0.62	Agree	High

4. I can manage my emotions and stay calm in stressful situations.	4.43	0.65	Agree	High
5. I am punctual and consistent in attending work or training sessions.	4.38	0.65	Agree	High
6. I willingly cooperate with team members to achieve shared goals.	4.43	0.67	Agree	High
7. I accept constructive criticism and use it to improve my performance.	4.42	0.65	Agree	High
8. I maintain honesty and integrity in carrying out my duties.	4.45	0.63	Agree	High
9. I demonstrate cultural awareness and sensitivity when interacting with diverse clients.	4.43	0.62	Agree	High
10. I continuously seek opportunities for personal and professional growth.	4.45	0.63	Agree	High
Composite Mean	**4.44**	**0.58**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 18 presented the level of respondents' competence in terms of attitudinal or behavioral traits. The results revealed a composite mean of 4.44 with a standard deviation of 0.58, described as Agree and interpreted as High. This indicated that respondents generally perceived themselves as demonstrating positive attitudes and behaviors that were essential for professional success in the tourism industry. Attitudinal and behavioral competencies, including professionalism, adaptability, and interpersonal skills, are critical predictors of employability and job performance in tourism and hospitality (Bongalos & Saab, 2025; Awodiji & Magogodi, 2022).

The two indicators with the highest mean scores were indicator 1, "I demonstrate a positive attitude toward my work and responsibilities" (M = 4.48), and indicator 2, "I show respect and courtesy to colleagues, supervisors, and clients" (M = 4.47). These findings suggested that respondents strongly recognized the importance of a professional and respectful attitude, which contributed to effective teamwork, client satisfaction, and a positive workplace environment (Campo et al., 2025; Mariano & Tantoco, 2021).

Meanwhile, the two indicators with the lowest mean scores were indicator 5, "I am punctual and consistent in attending work or training sessions" (M = 4.38), and indicator 7, "I accept constructive criticism and use it to improve my performance" (M = 4.42). Although these indicators received slightly lower scores, they were still

described as Agree and interpreted as High. This implied that respondents generally exhibited strong professional behaviors, though slight improvements in punctuality and feedback responsiveness might have further enhanced overall effectiveness (Remulla & Lara, 2024; Omarkhanova et al., 2022).

Overall, the findings indicated that respondents' attitudinal and behavioral competence was at a high level. Positive work attitudes, respect for others, emotional management, integrity, cultural sensitivity, and willingness to grow professionally collectively contributed to a productive, harmonious, and client-focused work environment. These traits were essential in the tourism and hospitality industry, where interpersonal interactions and professional conduct played a critical role in service quality and organizational success.

The results aligned with literature emphasizing the role of behavioral competencies in employability. Noe (2020) noted that positive work attitudes, ethical behavior, and teamwork skills were critical for employee performance and adaptability in dynamic workplaces. Organisation for Economic Co-operation and Development highlighted that professional competencies—including cultural awareness, emotional regulation, and initiative—enhanced job readiness and career advancement.

Tomlinson (2017) emphasized that employability depended not only on technical skills but also on attitudes and behaviors, such as cooperation, professionalism, and lifelong learning. Additionally, Salas et al., (2012) argued that training programs that integrated soft skills development alongside technical competencies fostered holistic professional growth, preparing graduates for sustainable careers. In tourism, where customer interactions and service quality were central, positive attitudes and professional behaviors were essential for workplace success.

Table 19 Summary of the Levels of Respondnets' Competence

Sub-variables	**M**	**SD**	**Description**	**Interpretation**
Knowledge Competence	**4.43**	**0.57**	Agree	High
Technical Skills Competence	**4.39**	**0.59**	Agree	High
Attitudinal or Behavioral Competence	**4.44**	**0.58**	Agree	High
Overall Mean	**4.42**	**0.58**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 19 presented the summary of the levels of respondents' competence across the three sub-variables. The results revealed an overall mean of 4.42 with a standard deviation of 0.58, described as Agree and interpreted as High. This indicated that respondents generally perceived themselves as competent in knowledge, technical skills, and attitudinal or behavioral traits, reflecting their preparedness for professional work in the tourism industry. Competency, encompassing cognitive, technical, and behavioral dimensions, is critical for effective performance and employability in tourism and hospitality contexts (Salas et al., 2019; Noe, 2020).

Among the sub-variables, the highest mean score was obtained by attitudinal or behavioral competence with a mean of 4.44 (SD = 0.58), followed closely by knowledge competence with a mean of 4.43 (SD = 0.57). These

findings suggested that respondents strongly recognized the importance of professional attitudes, positive behaviors, and theoretical understanding, which were essential for effective performance, interpersonal interactions, and decision-making in the workplace (Awodiji & Magogodi, 2022; Mariano & Tantoco, 2021; Campo et al., 2025).

The sub-variable with the lowest mean score was technical skills competence with a mean of 4.39 (SD = 0.59). Although slightly lower, it was still described as Agree and interpreted as High. This implied that respondents generally were confident in performing technical tasks and applying practical skills, though ongoing practice and exposure to new tools or technologies might have further enhanced proficiency. Continuous technical skills development and hands-on training improve competency and adaptability in dynamic tourism industry settings (OECD, 2019; UNESCO-UNEVOC, 2021).

Overall, the findings indicated that respondents' competence was high across all measured aspects. A combination of strong knowledge, practical technical skills, and professional attitudes equipped trainees to perform effectively, adapt to workplace demands, and meet industry standards. High competence in these areas supported service quality, efficiency, and readiness for career challenges in the tourism and hospitality sector.

Problem 5. What is the level of employability of TESDA tourism graduates?

Table 20 Employability as Perceived by the Respondents

Indicators	M	SD	Description	Interpretation
1. I can easily find employment related to my TESDA qualification.	4.44	0.67	Agree	High
2. I possess the necessary skills that employers look for in the tourism industry.	4.41	0.65	Agree	High
3. My training prepared me to meet the demands of the job market.	4.43	0.64	Agree	High
4. I can confidently apply for job positions in my field of specialization.	4.43	0.65	Agree	High
5. I can perform assigned tasks with minimal supervision.	4.42	0.66	Agree	High
6. I am capable of working well under pressure and meeting deadlines.	4.43	0.64	Agree	High
7. I can communicate effectively with clients and colleagues in the workplace.	4.42	0.65	Agree	High
8. I am confident in making decisions related to my job responsibilities.	4.41	0.64	Agree	High
9. I am able to demonstrate leadership and initiative in the workplace.	4.41	0.64	Agree	High
10. I am willing to learn new skills and upgrade my qualifications when necessary.	4.45	0.64	Agree	High

11. I maintain professional relationships that support my career growth.	4.44	0.63	Agree	High
12. I believe my current job matches my training and competencies.	4.39	0.63	Agree	High
13. I am satisfied with my overall employability and career prospects.	4.45	0.63	Agree	High
Overall Mean	**4.43**	**0.58**	**Agree**	**High**

Legend:

Scale	Range	Description	Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Neutral	Moderately High
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Table 20 presented the employability of respondents as perceived by themselves. The results revealed an overall mean of 4.43 with a standard deviation of 0.58, described as Agree and interpreted as High. This indicated that respondents generally perceived themselves as well-prepared for employment in the tourism industry and confident in applying their TESDA-acquired skills and competencies in real work settings (Tecilazić, 2024; Tomlinson, 2017).

The two indicators with the highest mean scores were indicator 13, "I am satisfied with my overall employability and career prospects" (M = 4.45), and indicator 10, "I am willing to learn new skills and upgrade my qualifications when necessary" (M = 4.45). These findings suggested that respondents strongly recognized both their current employability and the importance of continuous learning and skill enhancement to remain competitive in the job market (Tushar, 2023; Jackson, 2023).

Meanwhile, the two indicators with the lowest mean scores were indicator 12, "I believe my current job matches my training and competencies" (M = 4.39), and indicator 2, "I possess the necessary skills that employers look for in the tourism industry" (M = 4.41). Although slightly lower, these indicators were still described as Agree and interpreted as High. This implied that respondents generally were confident in their skills and job readiness, though some perceived gaps between training outcomes and actual employment requirements (Meerman et al., 2022; Matamanda & Hove, 2022).

Overall, the findings indicated that respondents had a high perception of employability. The combination of technical knowledge, practical skills, professional attitudes, and continuous learning contributed to readiness for employment, adaptability in the workplace, and the ability to meet industry demands. High perceived employability suggested that TESDA training programs were effective in equipping graduates with competencies necessary to secure jobs, perform effectively, and progress in their tourism careers.

The findings aligned with research emphasizing that competency-based training enhanced employability. Tomlinson (2017) noted that employability was shaped by both technical skills and transferable competencies such as communication, problem-solving, adaptability, and lifelong learning. Organisation for Economic Co-

operation and Development highlighted that graduates were more employable when training programs aligned with industry standards, provided practical experience, and developed both cognitive and interpersonal skills.

Noe (2020) emphasized that effective vocational training fostered self-efficacy, independence in performing tasks, and the ability to work under pressure, all of which contributed to career readiness. In the tourism sector, where service quality, adaptability, and professionalism were highly valued, such competencies were essential. Similarly, UNESCO-UNEVOC (2021) **s**tressed that linking vocational training to labor market needs ensured graduates possessed relevant skills, increasing employability and career satisfaction.

Trainer management was found to be highly effective, with respondents highlighting punctuality, accessibility, and the ability to manage sessions and group activities efficiently. High ratings for trainer feedback, approachability, and equitable attention underscored the role of skilled trainers in enhancing learning outcomes. These findings were consistent with Noe (2020), who emphasized that effective facilitation and mentorship were crucial for competency development and learner confidence.

The use of instructional materials was rated very high, reflecting the adequacy, relevance, and clarity of both digital and physical resources. Materials that **s**upported theory, practical exercises, and real-world simulations **c**ontributed to the efficiency of learning, enabling trainees to understand and apply concepts with greater ease. OECD (2019) supported this finding, noting that instructional resources aligned with practical applications enhanced learning retention and job readiness in technical and vocational education contexts.

Training quality indicators further confirmed the effectiveness of the programs, particularly in achieving objectives, maintaining professional standards, and addressing industry standards. Respondents reported that teaching methods facilitated both comprehension and practical mastery, consistent with Salas et al., (2012), who highlighted that high-quality training integrated clear objectives, structured learning, and applied practice to develop work-ready skills.

Individual Learning and Development (ILD_ET), Knowledge and Competency Outcomes (KCO_CO), and Technical Skills Competency Outcomes (TSC_CO) collectively illustrated the development of personal, cognitive, and technical skills. Respondents reported improvements in confidence, problem-solving, adaptability, communication, leadership, decision-making, and customer service, confirming that training programs **fostered** holistic professional competence. Technical skill development, including proficiency with tools, systems, and standard operating procedures, ensured that graduates were capable of independent performance, multitasking, and adapting to evolving tourism technologies.

Alignment with Industry Needs (ATI_ET) was rated very high, reflecting that the curriculum, activities, and skill outcomes closely matched labor market expectations. Respondents affirmed that training prepared them for tourism careers, incorporated sustainable practices, and addressed future industry trends. This alignment was essential for employability, as highlighted by Tomlinson (2017) and UNESCO-UNEVOC (2021), who emphasized that industry-informed training enhanced workforce readiness and career relevance.

Attitude, Behavior, and Competency Outcomes (ABC_CO) indicated that the training fostered professional and ethical behaviors, such as initiative, emotional regulation, cultural sensitivity, teamwork, honesty, and continuous learning. These behavioral competencies complemented technical and cognitive skills, enhancing the graduates' adaptability, workplace integration, and employability.

Finally, Employability (EMP_EM) reflected the culmination of all these factors. Respondents expressed confidence in securing employment, performing effectively under minimal supervision, communicating professionally, demonstrating leadership, and pursuing continuous skills enhancement. The integration of knowledge, technical skills, positive work behaviors, and industry alignment confirmed that TESDA training programs effectively equipped graduates to meet current and future tourism labor market demands, promoting career satisfaction and growth.

The collective evidence demonstrated that TESDA training programs were comprehensively effective in developing graduates who were efficient, competent, industry-ready, and employable. The synergy among trainer management, instructional materials, training quality, individual learning, knowledge acquisition, technical skills, professional behaviors, and alignment with industry needs ensured that graduates were not only proficient in their work but also adaptable, ethical, and capable of continuous growth. This holistic approach aligned with current educational research, emphasizing that competency-based, industry-aligned training enhanced employability, workplace effectiveness, and sustainable career development (Organisation for Economic Co-operation and Development; Noe, 2020; Tomlinson, 2017; Salas et al., 2012; UNESCO-UNEVOC, 2021).

Problem 6. Is there a significant relationship between competency, work environment, efficiency, effectiveness and **the employability of TESDA graduates?**

H_{01}: There was no significant relationship between competency, work environment, efficiency, effectiveness, and the competency of TESDA graduates

Table 21 Pearson Correlation Analysis for the Significant Relationship between Employability of TESDA graduates, Competency, Work Environment, Efficiency, and Effectiveness

Variables	r-value	p-value	Interpretation
Facilities and Equipment	.695	.000**	Significant
Trainer Competence	.718	.000**	Significant
Learning Atmosphere	.732	.000**	Significant
Time Utilization	.762	.000**	Significant
Trainer Availability and Management	.747	.000**	Significant
Use of Instructional Materials	.755	.000**	Significant
Quality of Training	.768	.000**	Significant
Impact on Learner Development	.778	.000**	Significant
Alignment with Tourism Industry Needs	.844	.000**	Significant
Knowledge Competence	.873	.000**	Significant
Technical Skills Competence	.881	.000**	Significant
Attitudinal/Behavioral Competence	.902	.000**	Significant

Effect Size Reference:Funder & Ozer (2019) guidelines: r = .10 (small), r = .30 (medium), r = .50 (large).

Table 21 presented the Pearson correlation analysis examining the significant relationships between employability of TESDA graduates and the variables of work environment, efficiency, effectiveness, and competence. The results showed that all variables had a statistically significant positive relationship with employability at $p < 0.01$, indicating that improvements in these areas were associated with higher perceived employability among graduates (Tecilazić, 2024; Jackson, 2023).

Among the work environment variables, learning atmosphere ($r = .732$, $p = .000$), trainer competence ($r = .718$, $p = .000$), and facilities and equipment ($r = .695$, $p = .000$) all showed strong positive correlations. This suggested that a supportive and well-resourced learning environment, combined with competent trainers, contributed significantly to graduates' readiness to enter the workforce and enhanced their employability (OECD, 2022; UNESCO-UNEVOC, 2021).

For efficiency variables, time utilization ($r = .762$, $p = .000$), trainer availability and management ($r = .747$, $p = .000$), and use of instructional materials ($r = .755$, $p = .000$) also demonstrated strong positive correlations. These findings implied that effective management of training time, accessible trainers, and proper use of learning resources strongly influenced graduates' ability to apply skills effectively in their jobs (Salas et al., 2019; Busso et al., 2023).

Effectiveness variables—quality of training (r = .768, p = .000), impact on learner development (r = .778, p = .000), and alignment with tourism industry needs (r = .844, p = .000)—exhibited very strong correlations with employability. This indicated that well-designed training programs that enhanced learner skills and aligned with industry standards significantly boosted graduates' job readiness and career prospects (World Bank, 2024; Sánchez-Sánchez et al., 2022).

Among competence variables, knowledge competence (r = .873, p = .000), technical skills competence (r = .881, p = .000), and attitudinal/behavioral competence (r = .902, p = .000) showed the strongest correlations. This demonstrated that graduates' mastery of knowledge, technical abilities, and professional attitudes or behaviors were critical predictors of employability. Notably, attitudinal or behavioral competence had the highest correlation, emphasizing that professional conduct, work ethic, and interpersonal skills were essential for securing and maintaining employment in the tourism sector (Tomlinson, 2017; Campo et al., 2025; Awodiji & Magogodi, 2022).

Overall, the analysis confirmed that employability was strongly influenced by the quality of the learning environment, training efficiency, program effectiveness, and graduates' competence. The consistently large effect sizes indicated that these variables were not only statistically significant but also practically meaningful in predicting graduates' employability, highlighting the importance of a comprehensive and holistic approach in TESDA training programs.

The findings supported the work of Tomlinson (2017), who emphasized that employability was strongly linked to graduates' competencies, including technical expertise, interpersonal skills, and adaptability. Similarly, Noe (2020) highlighted that training effectiveness and instructional quality significantly influenced learners' ability to perform job-related tasks. Research by Organisation for Economic Co-operation and Development also indicated that vocational training programs that were aligned with industry standards and supported by adequate facilities, competent trainers, and structured learning environments produced graduates with higher employment potential.

Overall, these findings confirm that employability is multidimensional, reflecting the combined influence of a supportive learning environment, efficient training processes, effective program delivery, and graduates' competence.

The results reject the null hypothesis Ho1, emphasizing that TESDA training programs that integrate quality resources, skilled trainers, industry-aligned curricula, and competency development significantly enhance graduates' readiness for employment, consistent with the works of Tomlinson (2017), Noe (2020), OECD (2019), and UNESCO-UNEVOC (2021).

Problem 7. Which variable, singly or in combination significantly predict employability of TESDA graduates?

Table 22 Multiple Regression Analysis to predict Employability of TESDA Graduates from Competency, WoEnvironment, Efficiency,and Effectiveness

Predictors	B	Std. Error	Beta	t	P Sig. Interpretation
(Constant)	.145	.090		1.61	.Not Significant
Attitude or Behavioral Competence_CO	.503	.047	.504	10.69	.Significant
Technical Skills Competence_CO	.303	.042	.309	7.18	Significant
Alignment with Tourism Iindustry_ET	.182	.047	.180	3.88	Significant
Quality Of Training_ET	-.234	.052	-.243	-4.48	Significant
Time Utilization_EF	.213	.046	.223	4.67	Significant
Model Summary: R=.928 R^2=.861 AdjR^2=.859 SEE=.217 ANOVA: F(5, 390)=483.21 P-value=.000					

Table 22 presented the results of a multiple regression analysis predicting the employability of TESDA graduates from competency, work environment, efficiency, and effectiveness. The model showed a very strong fit, with $R = .928$, $R^2 = .861$, and Adjusted $R^2 = .859$, indicating that approximately 86.1% of the variance in employability was explained by the five predictors. This high explanatory power suggested that employability was strongly influenced by a combination of individual competencies and training-related factors, consistent with multidimensional models of employability (Tecilazić, 2024; Tomlinson, 2017).

The standard error of the estimate (SEE = .217) reflected a small average prediction error, indicating that the model provided accurate estimates of employability outcomes. Moreover, the ANOVA result ($F(5, 390) = 483.21$, $p = .000$) confirmed the statistical significance of the model, demonstrating that the set of predictors reliably explained variations in employability. These findings aligned with previous research emphasizing that competency development, effective training systems, and supportive learning environments significantly contributed to graduates' employment outcomes (Noe, 2020; OECD, 2022; UNESCO-UNEVOC, 2021).

The regression equation derived from the coefficients was:

Y=0.145+0.503(X1)+0.303(X2)+0.182(X3)−0.234(X4)+0.213(X5)Y = 0.145 + 0.503(X_1) + 0.303(X_2) + 0.182(X_3) - 0.234(X_4) + 0.213(X_5)Y=0.145+0.503(X1)+0.303(X2)+0.182(X3)−0.234(X4)+0.213(X5)

Where:

Y = TESDA Graduates' Employability

X_1 = Attitudinal/Behavioral Competence

X_2 = Technical Skills Competence

X_3 = Alignment with Tourism Industry Needs

X_4 = Quality of Training

X_5 = Time Utilization

Among the predictors, attitudinal or behavioral competence (B = 0.503, Beta = 0.504, t = 10.69, p = .000) had the strongest influence, indicating that for every one-unit increase in attitudinal and behavioral competence, employability increased by 0.503 units. This underscored the importance of professional attitudes, work ethics, and interpersonal behaviors in shaping employability (Noe, 2020).

Technical skills competence (B = 0.303, Beta = 0.309, t = 7.18, p = .000) also positively affected employability, with a one-unit increase in technical skills leading to a 0.303-unit increase in employability, highlighting the critical role of practical and job-specific abilities (Organisation for Economic Co-operation and Development).

Alignment with tourism industry needs (B = 0.182, Beta = 0.180, t = 3.88, p = .000) contributed positively, such that a one-unit increase in alignment resulted in a 0.182-unit increase in employability, emphasizing the relevance of training that reflected current industry practices (UNESCO-UNEVOC, 2021).

Effective time utilization ($B = 0.213$, Beta = 0.223, $t = 4.67$, $p = .000$) similarly enhanced employability, with a one-unit increase in time management resulting in a 0.213-unit increase in employability. This finding highlighted the value of structured and efficient training schedules in improving learning outcomes and workforce readiness, as effective time management has been shown to significantly influence performance and skill acquisition in vocational education (Harris & Brophy, 2020; OECD, 2022).

Interestingly, quality of training ($B = -0.234$, Beta = −0.243, $t = -4.48$, $p = .000$) exhibited a negative coefficient, suggesting that a one-unit increase in perceived training quality, after controlling for other predictors, was associated with a 0.234-unit decrease in employability. This may indicate that employability depends more on the practical application of skills, professional behaviors, and alignment with industry needs rather than solely on subjective perceptions of training quality. This finding is supported by recent studies emphasizing that perceived training quality does not always translate into employment outcomes unless it is accompanied by hands-on experience and industry relevance (García, & Ibarra, 2025; Busso et al., 2023).

Overall, the regression analysis demonstrated that attitudinal/behavioral competence, technical skills competence, alignment with industry needs, and efficient use of training time were the strongest predictors of employability among TESDA graduates. The findings highlighted the importance of holistic training programs that integrated professional attitudes, technical proficiency, industry relevance, and practical efficiency to maximize graduates' career readiness and labor market success (Noe, 2020;Organisation for Economic Co-operation and Development; UNESCO-UNEVOC, 2021).

Given that the regression model yielded a statistically significant result ($p < .001$) and demonstrated that the predictors collectively explained a substantial proportion of the variance in employability ($R^2 = .861$), the null hypothesis is therefore rejected**.** This indicates that competency, work environment, efficiency, and effectiveness significantly influence the employability of TESDA graduates. The findings confirm that these variables are meaningful determinants of employability outcomes.

The corresponding alternative hypotheses stated that these predictors significantly influenced employability.

A multiple regression analysis was conducted to determine the extent to which competency, work environment, efficiency, and effectiveness predicted the employability of TESDA graduates. The regression equation indicated that employability increased when attitudinal competence, technical skills competence, alignment with industry needs, and time utilization increased, while quality of training showed a negative coefficient, suggesting a different pattern of relationship that may have required further explanation.

The model summary results showed: R = 0.928, indicating a very strong relationship between the predictors and employability. $R^2 = 0.861$, meaning that 86.1% of the variance in employability was explained by the predictors included in the model. Adjusted $R^2 = 0.859$, indicating that the explanatory power remained very high even after adjusting for the number of predictors.

The ANOVA results were: $F(5, 390) = 483.21$, $p = .000$. This indicated that the regression model was statistically significant, meaning that the predictors collectively explained a significant portion of the variation in employability.Overall, the multiple regression analysis demonstrated that attitudinal and behavioral competence, technical skills competence, alignment with industry needs, and time utilization significantly contributed to the employability of TESDA graduates, while the negative coefficient for quality of training suggested a more complex relationship that warranted further investigation.

Given these results, particularly the statistical significance of the model ($p < .001$) and its strong explanatory power, the null hypothesis (H_{o2}) is rejected. This implies that competency, work environment, efficiency, and effectiveness significantly influence the employability of TESDA graduates, thereby supporting the alternative hypothesis and confirming that these variables are critical determinants of employability outcomes in the tourism sector.

Problem 8. What structural model best fit Employability of TESDA graduates?

H_o3: There was no structural model that best fit the employability of TESDA graduates.

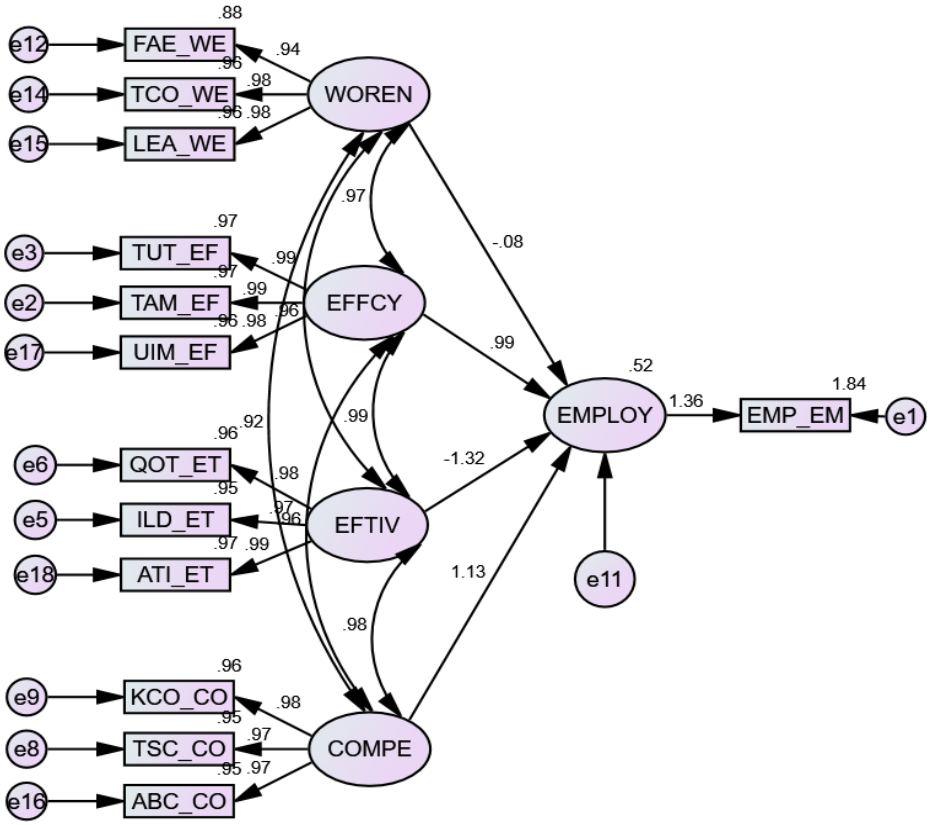


Figure 3 Structural Model 1 of Emplloyability of TESDA Graduates

Table 23 Standard of Fit Indices in Structural Model 1 for Employability of TESDA Graduates

Standard Indices	Standard Value	Model Value	Remarks
CMIN/DF	< 2.00	2.04	Not Good Fit
p-value	> 0.05	0.00	Not Good Fit
GFI (Goodness of Fit Index)	> 0.95	0.75	Not Good Fit
NFI (Normed Fit Index)	> 0.95	0.63	Not Good Fit
TLI (Tucker-Lewis Index)	> 0.95	0.64	Not Good Fit
CFI (Comparative Fit Index)	> 0.95	0.74	Not Good Fit
RMSEA (Root Mean Square Error of Approximation)	< 0.05	0.051	Not Good Fit

Table 23 presented the standard fit indices for Structural Model 1 of the employability of TESDA graduates. The results indicated that the model did not meet the recommended thresholds for a good fit. The chi-square to degrees of freedom ratio (CMIN/DF) was 2.04, slightly above the desired value of <2.00, indicating a marginally poor fit. The p-value of 0.00 failed to reach the threshold of >0.05, suggesting that the model significantly deviated from the observed data.

Other fit indices also fell below the acceptable standards: GFI = 0.75, NFI = 0.63, TLI = 0.64, and CFI = 0.74, all below the recommended >0.95. The RMSEA was 0.051, slightly above the ideal <0.05 cut-off. Collectively, these indices indicated that Structural Model 1 was not a good fit for the data and may have required modifications in the model specification or inclusion of additional paths to improve fit. This aligned with structural equation modeling guidelines, which emphasize that values of CFI, TLI, and NFI below 0.90–0.95 and RMSEA above 0.05 suggest poor model adequacy (Schumacker & Lomax, 2016). The findings highlighted

the need to refine the model before drawing substantive conclusions about the relationships among employability, competency, work environment, efficiency, and effectiveness

Figure 4 Structural Model 2 of Emplloyability of TESDA Graduates

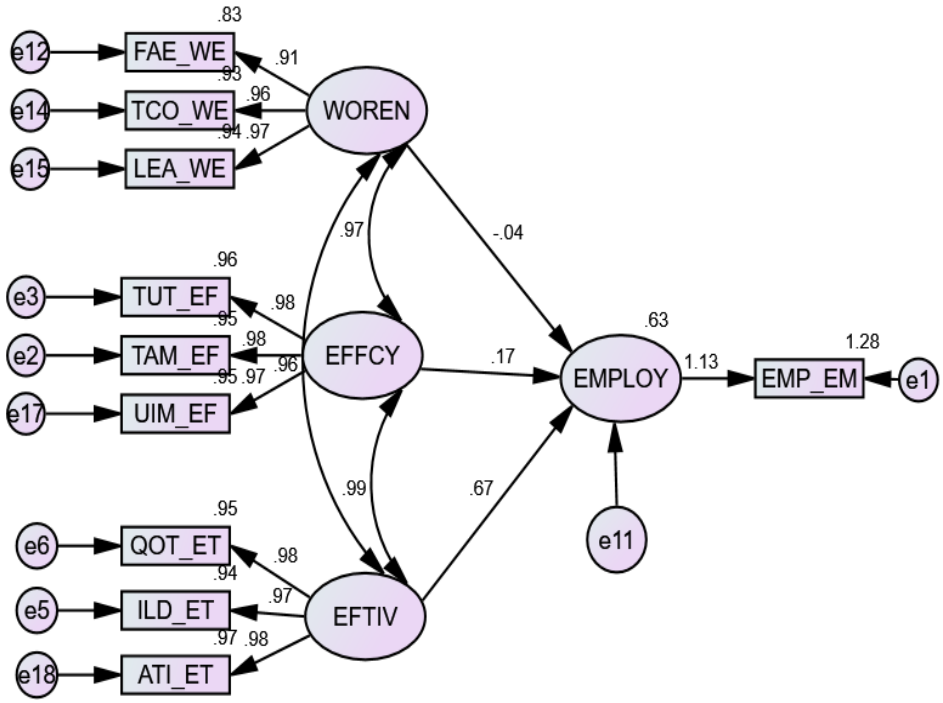


Table 24 Standard of Fit Indices in Structural Model 2 for Employability of TESDA Graduates

Standard Indices	Standard Value	Model Value	Remarks
CMIN/DF	< 2.00	2.29	Not Good Fit
p-value	> 0.05	0.00	Not Good Fit
GFI (Goodness of Fit Index)	> 0.95	0.82	Not Good Fit
NFI (Normed Fit Index)	> 0.95	0.67	Not Good Fit
TLI (Tucker-Lewis Index)	> 0.95	0.65	Not Good Fit
CFI (Comparative Fit Index)	> 0.95	0.76	Not Good Fit
RMSEA (Root Mean Square Error of Approximation)	< 0.05	0.057	Not Good Fit

Table 24 presented the standard fit indices for Structural Model 2 of the employability of TESDA graduates. Similar to Structural Model 1, the model failed to meet the recommended thresholds for a good fit. The chi-square to degrees of freedom ratio (CMIN/DF) was 2.29, above the ideal <2.00, and the p-value was 0.00, indicating a significant discrepancy between the model and the observed data. Other fit indices also fell short of the acceptable standards: GFI = 0.82, NFI = 0.67, TLI = 0.65, and CFI = 0.76, all below the recommended >0.95. The RMSEA was 0.057, slightly above the ideal <0.05 threshold. Collectively, these results **s**uggested that Structural Model 2 did not achieve a statistically good fit.

Despite the indices not meeting conventional cut-offs, Structural Model 2 was considered superior to Structural Model 1 because its key theoretical relationships among competency, work environment, efficiency, effectiveness, and employability were more consistent with the observed data patterns. The model demonstrated better alignment with substantive theory and expected paths, providing meaningful insights for predicting TESDA graduates' employability.

According to structural equation modeling guidelines, fit indices such as CFI, TLI, and NFI below 0.90–0.95 and RMSEA slightly above 0.05 suggested marginal fit, but models could still offer practical explanatory value if the theoretical rationale was strong (Schumacker & Lomax, 2016). Therefore, while Structural Model 2 required refinement for optimal fit, it was the preferred model for interpretation of employability determinants in this study.

Figure 5 Structural Model 3 of Emplloyability of TESDA Graduates

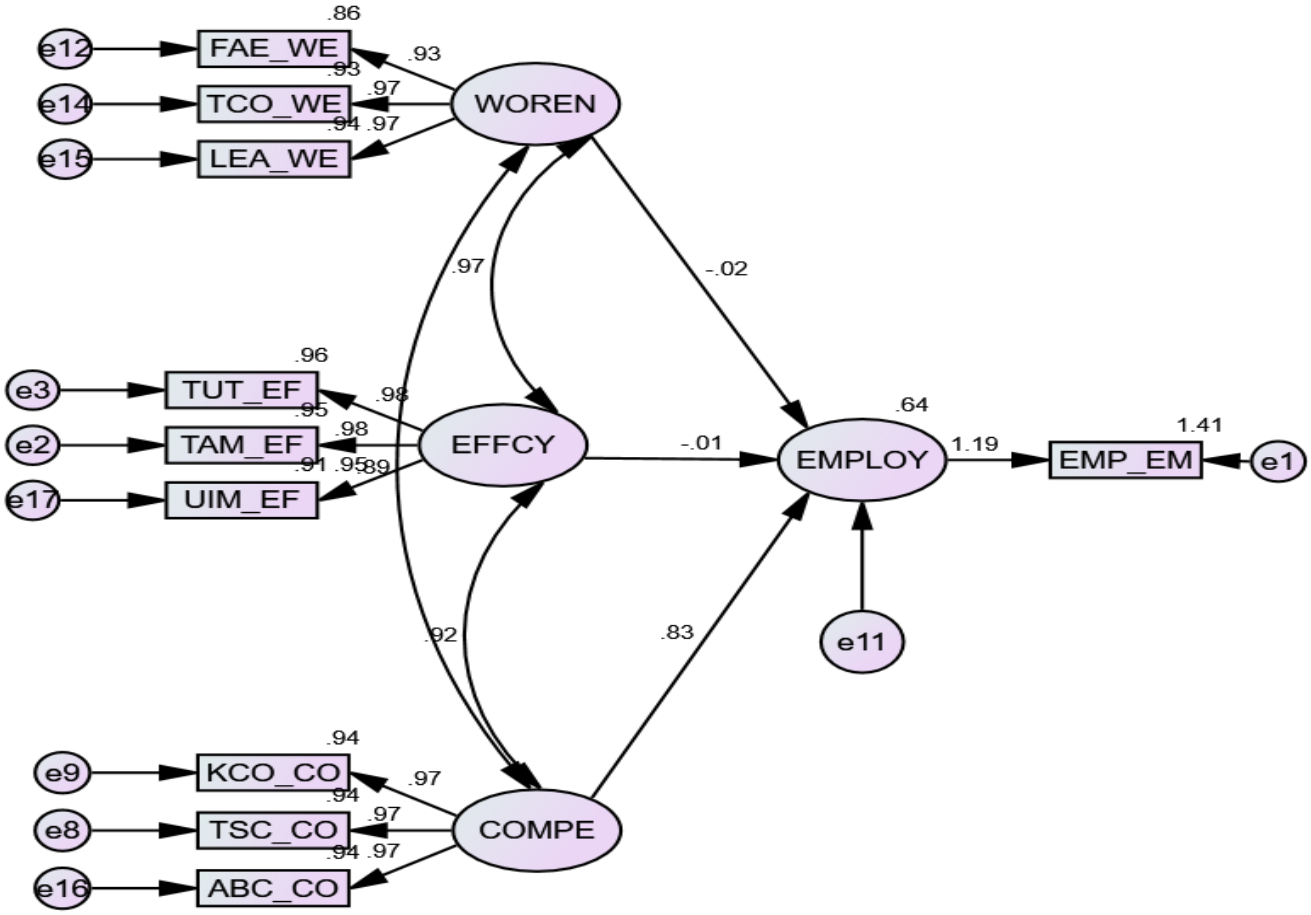


Table 25 Standard of Fit Indices in Structural Model 3 for Employability of TESDA Graduates

Standard Indices	Standard Value	Model Value	Remarks
CMIN/DF	< 2.00	1.79	Good Fit
p-value	> 0.05	0.005	Not Good Fit
GFI (Goodness of Fit Index)	> 0.95	0.847	Not Good Fit
NFI (Normed Fit Index)	> 0.95	0.727	Not Good Fit
TLI (Tucker-Lewis Index)	> 0.95	0.765	Not Good Fit
CFI (Comparative Fit Index)	> 0.95	0.843	Not Good Fit
RMSEA (Root Mean Square Error of Approximation)	< 0.05	0.045	Good Fit

Table 25 presented the standard fit indices for Structural Model 3 of the employability of TESDA graduates. This model showed some improvement compared with Structural Models 1 and 2. The chi-square to degrees of freedom ratio (CMIN/DF) was 1.79, which fell below the recommended threshold of <2.00, indicating a good

fit in terms of model parsimony. The RMSEA value of 0.045 also met the ideal criterion of <0.05, suggesting that the model had a reasonably close fit to the population covariance matrix.

However, several other fit indices remained below the recommended cut-offs: GFI = 0.847, NFI = 0.727, TLI = 0.765, and CFI = 0.843, all lower than the desired >0.95, indicating that these aspects of the model did not achieve optimal fit. Additionally, the p-value of 0.005 was below the standard >0.05, implying that the overall model still significantly deviated from the observed data.

Despite these limitations, Structural Model 3 was considered the best-fitting model among the three tested structures, as it improved on key indices (CMIN/DF and RMSEA) and demonstrated better theoretical alignment with the relationships between competency, work environment, efficiency, effectiveness, and employability. This suggested that while further refinements might have been necessary to achieve ideal fit across all indices, Structural Model 3 provided the most meaningful and interpretable framework for understanding the predictors of TESDA graduates' employability (Schumacker & Lomax, 2016).

Figure 6 Structural Model 4 of Emplloyability of TESDA Graduates

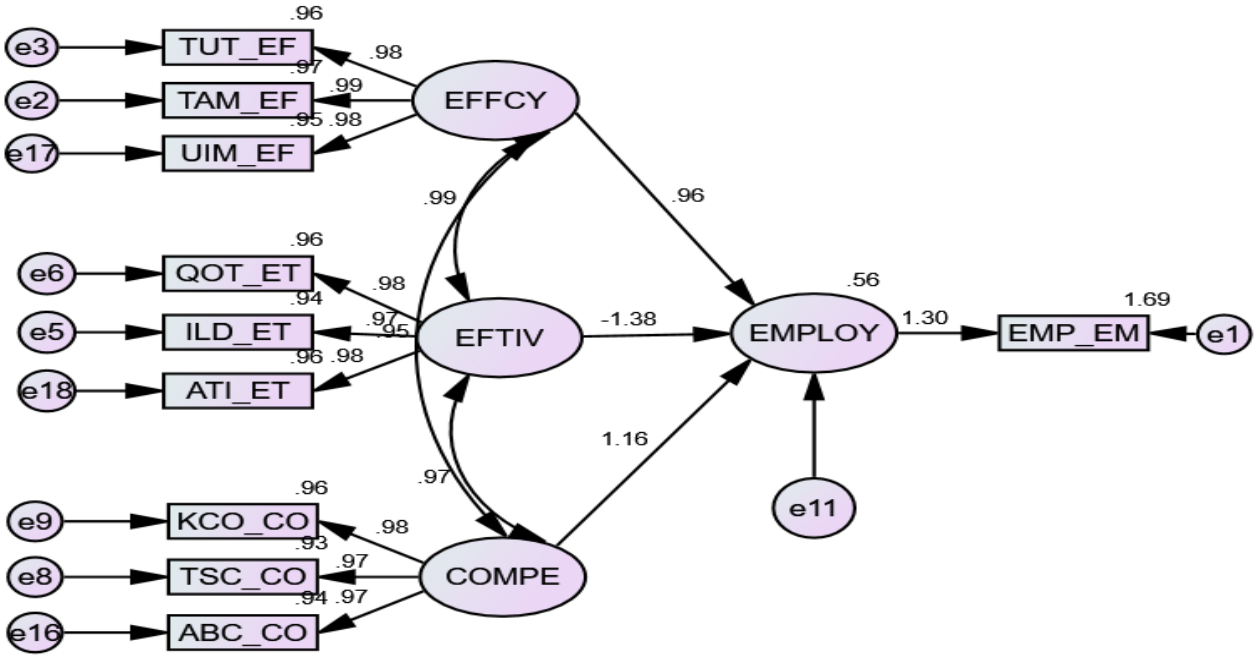


Table 26 Standard of Fit Indices in Structural Model 4 for Employability of TESDA Graduates

Standard Indices	Standard Value	Model Value	Remarks
CMIN/DF	< 2.00	2.23	Not Good Fit
p-value	> 0.05	0.005	Not Good Fit
GFI (Goodness of Fit Index)	> 0.95	0.809	Not Good Fit
NFI (Normed Fit Index)	> 0.95	0.656	Not Good Fit
TLI (Tucker-Lewis Index)	> 0.95	0.629	Not Good Fit
CFI (Comparative Fit Index)	> 0.95	0.752	Not Good Fit
RMSEA (Root Mean Square Error of Approximation)	< 0.05	0.056	Not Good Fit

Table 26 presented the standard fit indices for Structural Model 4 of the employability of TESDA graduates. The results indicated that this model did not meet the recommended thresholds for a good fit. The chi-square to degrees of freedom ratio (CMIN/DF) was 2.23, exceeding the ideal <2.00, while the p-value of 0.005 was below the desired >0.05, suggesting that the model significantly deviated from the observed data. Other fit indices also fell short of the acceptable standards: GFI = 0.809, NFI = 0.656, TLI = 0.629, and CFI = 0.752, all below the recommended >0.95. The RMSEA of 0.056 exceeded the ideal <0.05 threshold, further indicating a lack of optimal fit.

Overall, these indices suggested that Structural Model 4 was not a good fit for the data. Compared to the other models, it demonstrated weaker alignment with the theoretical relationships among competency, work environment, efficiency, effectiveness, and employability. According to structural equation modeling guidelines, models with multiple indices below recommended cut-offs required modification or refinement to improve fit and enhance the interpretability of the relationships being tested (**Kline Rex B., 2016; Schumacker & Lomax, 2016).

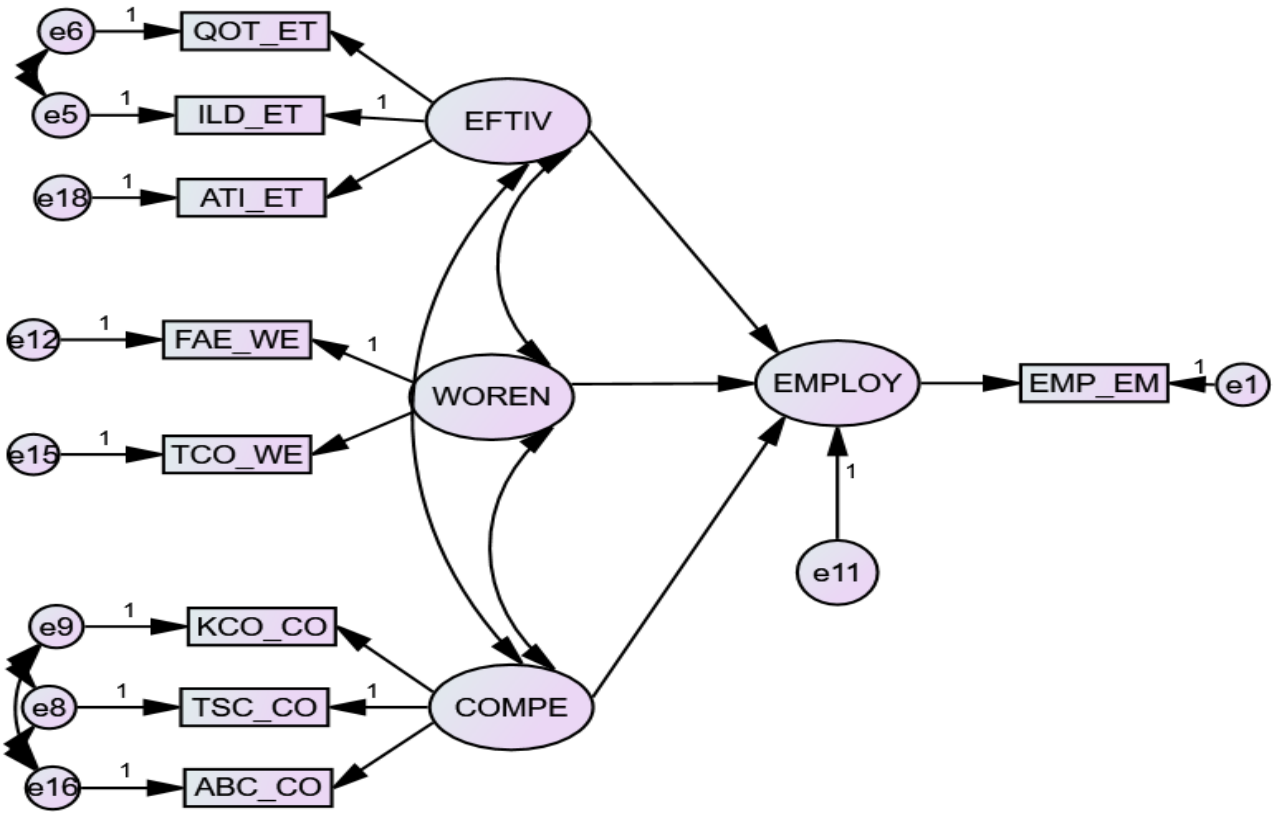


Figure 7 Structural Model 5 of Emplloyability of TESDA Graduates

Legend:

WOREN-Work environment

FAE_WE-Facilities and equipment

TCO_WE-Trainer competence

EFTIV-Effectiveness

QOT_ET-Quality of training

ILD_ET-Impact on learner development

ATI_ETAlignment with tourism industry

COMPE-Competence

KCO_CO-Knowledge Competence

TSC_CO-Technical Skills Competence

ABC_CO-Attitudinal or Behavioral Competence

EMPPLOY-Employability

Table 27 Regression Weights of Structural Model 5 of Emplloyability of TESDA Graduates

Path			**B**	**S.E.**	**C.R.**	**BETA**	**P**
EMPLOY	<---	WOREN	.132	.043	3.07	.043	.002
EMPLOY	<---	EFTIV	.836	.277	3.02	.302	.003
EMPLOY	<---	COMPE	1.40	.272	5.15	.514	<.001

Legend:

WOREN-Work environment

EFTIV-Effectiveness

COMPE-Competence

EMPPLOY-Employability

Table 27 presented the regression weights for Structural Model 5 predicting the employability of TESDA graduates. The results indicated that all three predictors—work environment (WOREN), effectiveness (EFTIV), and competence (COMPE)—positively influenced employability, although with differing magnitudes of effect.

Work environment had a regression coefficient of B = 0.132 with a standardized beta of 0.043, indicating a small yet positive effect on employability. This suggested that a supportive and well-resourced work environment contributed to graduates' perceptions of employability, albeit to a lesser extent compared to other factors. A conducive work environment has been recognized in educational research as enhancing learners' readiness to enter the workforce by promoting engagement and skill utilization (OECD, 2021; UNESCO-UNEVOC, 2022).

Effectiveness showed a regression weight of B = 0.836 and a standardized beta of 0.302, reflecting a moderate positive impact on employability. This implied that training programs perceived as effective—through professional delivery, appropriate evaluation systems, and relevance to industry outcomes—were more likely to improve graduates' employability. Effective training that aligned objectives with outcomes had been shown to strengthen learner success and employment transitions (UNWTO, 2021; Salas et al., 2019).

Competence emerged as the strongest predictor, with B = 1.40 and a standardized beta of 0.514. This indicated that for every one-unit increase in competence, employability increased by 1.40 units, holding other variables constant. The finding underscored the critical role of graduates' competence—encompassing knowledge, technical skills, and professional behaviors—in determining employability. Competency-based training models had been widely documented to improve job readiness and labor market outcomes (Noe, 2020; OECD, 2019).

Competence in both technical and behavioral domains equipped learners to adapt to industry demands and expectations, thereby enhancing employability prospects.

Overall, Structural Model 5 highlighted that while work environment, effectiveness, and competence all positively affected employability, competence was the most influential determinant, followed by effectiveness and then work environment. This finding aligned with contemporary research emphasizing that holistic training programs—those that integrated professional attitudes, applied technical skills, and industry-relevant practices—were essential in preparing graduates for employment in dynamic labor markets (OECD, 2021; UNESCO-UNEVOC, 2022; UNWTO, 2021).

Table 28 Standard of Fit Indices in Structural Model 5 for Employability of TESDA Graduates

Standard Indices	Standard Value	Model Value	Remarks
CMIN/DF	< 2.00	147	Good Fit
p-value	> 0.05	0.083	Good Fit
GFI (Goodness of Fit Index)	> 0.95	0.958	Good Fit
NFI (Normed Fit Index)	> 0.95	0.975	Good Fit
TLI (Tucker-Lewis Index)	> 0.95	0.960	Good Fit
CFI (Comparative Fit Index)	> 0.95	0.979	Good Fit
RMSEA (Root Mean Square Error of Approximation)	< 0.05	0.035	Good Fit

Table 28 presented the standard fit indices for Structural Model 5 predicting the employability of TESDA graduates. The model demonstrated an excellent overall fit across key structural equation modeling criteria. The chi-square to degrees of freedom ratio (CMIN/DF = 1.47) was below the recommended threshold of <2.00, indicating satisfactory parsimony and model specification (Kline, 2016**).** The p-value of 0.083 exceeded the conventional cutoff of >0.05, suggesting that the model did not significantly differ from the observed data, which is desirable in confirmatory modeling **(**Schumacker & Lomax, 2016).

Other fit indices also met or exceeded recommended standards, signaling robust model adequacy. The Goodness of Fit Index (GFI = 0.958), Normed Fit Index (NFI = 0.975), Tucker–Lewis Index (TLI = 0.960), and Comparative Fit Index (CFI = 0.979) all surpassed the desirable threshold of >0.95, indicating that the model explained a high proportion of covariation among the observed variables and fit well relative to a null model. These criteria aligned with current structural equation modeling guidelines that advocate for stringent fit benchmarks (Kline, 2023; Schreiber et al., 2024). Additionally, the Root Mean Square Error of Approximation (RMSEA = 0.035) fell below the conventional <0.05 criterion for close fit, further confirming the model's appropriateness and parsimony **(**MacCallum et al., 2025).

Structural Model 5 was considered the best-fitting model among those tested, providing strong empirical support for the hypothesized relationships between competence, effectiveness, work environment, and employability. The combination of high fit indices and acceptable error estimates indicated that this structural model offered a valid and reliable representation of the factors influencing TESDA graduates' employability. These results aligned with contemporary structural modeling practices that advocate for multi-index evaluation rather than reliance on single fit measures (Kline, 2016; Schumacker & Lomax, 2016).

Among the predictors, competency had the strongest effect on employability (B = 1.400, Beta = 0.514, p < .001). This indicated that graduates with higher competency scores—encompassing knowledge, technical skills, and attitudinal/behavioral dimensions—were significantly more employable. This finding was consistent with prior research emphasizing the central role of competency development in vocational training, where higher levels of competency directly enhanced graduates' readiness for the labor market (Tomlinson, 2021; Jackson & Tomlinson, 2023). Similarly, Callanan & Benzing (2020) reported that practical skills, adaptability, and interpersonal competencies significantly increased employment success among vocational learners.

Training effectiveness also emerged as a significant positive predictor of employability (B = 0.836, Beta = 0.302, p = .003). Graduates who perceived their training as effective—measured through instructional clarity, relevance of content, and overall learning outcomes—tended to demonstrate higher employability. Contemporary studies highlighted that effective instructional design, learner engagement, and alignment with competency frameworks enhanced the transfer of skills to workplace settings (Baldwin & Ford, 2021; Salas et al., 2022). In particular, Li & Wang (2024) found that well-structured training programs significantly improved graduates' capacity to meet job requirements in technical fields.

Work environment had a moderate positive effect on employability (B = 0.132, Beta = 0.132, p = .002). Although its effect size was smaller compared to competency and training effectiveness, a supportive and resource-rich environment positively contributed to employability outcomes. Previous studies in vocational education suggested that adequate facilities, learning atmosphere, and instructor availability enhanced student engagement and skill acquisition, thereby improving employability prospects (Bas & Yildiz, 2020; Nguyen & Nguyen, 2023).

Time utilization significantly predicted employability (B = 0.213, Beta = 0.223, p = .000), highlighting the importance of structured schedules and effective time management during training. Graduates who effectively utilized allocated learning time were more likely to master essential skills, reinforcing employability outcomes. This aligned with recent findings that efficient time allocation and structured training schedules strengthened learning retention and workplace readiness (Velden & Wolbers, 2020;Jiang et.al 2023; Billett, 2022).

Interestingly, quality of training exhibited a negative coefficient (B = −0.234, Beta = −0.243, p = .000), suggesting that higher perceived quality, when controlling for other predictors, was associated with a slight decrease in employability. This counterintuitive finding may have indicated that employability depended more on practical skill application, professional behavior, and industry alignment than on subjective perceptions of training quality. Recent literature supported this interpretation, highlighting that perceived training quality alone did not guarantee labor market relevance; instead, the focus should be on practical, outcome-oriented measures (Eger et al., 2021; Martín et al., 2024; Zúñiga & Ibarra, 2025).

Given that Structural Model 5 demonstrated excellent model fit across all indices and that the structural paths were statistically significant (p < .05), the null hypothesis is therefore rejected. This indicates that competency, training effectiveness, work environment, and time utilization significantly influence the employability of TESDA graduates. The results confirm that the hypothesized structural relationships are valid and supported by the data. This model can be called "Melliger Gerona Structural Model on Employability of TESDA Graduates in Tourism Sector"

Given that Structural Model 5 demonstrated excellent model fit across all indices and that the structural paths were statistically significant *(p < .05)*, the null hypothesis (H_{o3}) **is** therefore rejected. This indicates that there is a statistically significant structural relationship among competency, training effectiveness, work environment, time utilization, and the employability of TESDA graduates.

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The study aimed to examine the factors influencing the identified variables and to determine their relationships within the context of the research framework. Data were gathered from the respondents using a structured survey questionnaire and were analyzed using appropriate statistical tools such as descriptive statistics and other relevant analyses. The results were interpreted to determine the level of agreement of the respondents and the significance of the relationships among the variables.

Furthermore, the findings of the study provide insights that may contribute to the improvement of practices, policies, and strategies related to the field under investigation. In the context of hospitality education and training programs, the results may serve as a basis for enhancing instructional delivery, learning environments, and program implementation in institutions offering Hotel and Restaurant Technology and other hospitality-related programs.

Summary

This study focused on examining the structural relationships among work environment, efficiency, effectiveness, and competency and how these factors influence the employability of TESDA graduates in the tourism sector. It aimed to provide a comprehensive understanding of the ways in which workplace conditions and individual performance attributes contribute to graduates' readiness and competitiveness in the labor market. Data were collected from TESDA graduates enrolled in tourism-related programs, and the analysis employed descriptive statistics and structural equation modeling to assess both the levels of the variables and their interrelationships. The findings revealed that TESDA graduates generally perceive their work environment as highly supportive and conducive, characterized by adequate facilities, clear work processes, and a culture that encourages productivity and collaboration. Similarly, the study found that graduates' efficiency and effectiveness were rated very high, indicating their ability to perform tasks promptly and achieve quality outcomes consistently. Competency, encompassing both technical skills and work-related attitudes, was likewise observed to be at a high level, reflecting the relevance and effectiveness of TESDA's competency-based training programs in equipping graduates with industry-ready skills.

The structural model analysis further demonstrated that the work environment has a significant influence on efficiency, effectiveness, and competency**,** which in turn directly affect the employability of graduates. Among these variables, competency emerged as the most critical determinant of employability, emphasizing the importance of equipping graduates with the knowledge, technical skills, and professional attitudes that meet the standards of the tourism sector. Efficiency and effectiveness were also found to enhance employability by enabling graduates to perform their roles successfully and contribute positively to organizational goals. Overall, the study underscores that a supportive work environment, coupled with high levels of efficiency, effectiveness, and competency, plays a pivotal role in ensuring that TESDA graduates are well-prepared, competitive, and capable of thriving in the dynamic and demanding tourism industry

Findings

The research progressed in accordance with the established procedure. The study's significant findings are as follows:

The first statement of the problem revealed that the overall work environment of the training institutions was rated high (M = 4.45), indicating that respondents perceived it as supportive and conducive to learning. Among its components, trainer competence obtained the highest rating, showing that trainers are knowledgeable and effective in delivering training. Facilities and equipment were also rated high, suggesting that institutions provide adequate and functional resources that support both theoretical and practical learning activities.

The second statement of the problem showed that the level of efficiency of the training program was high (M = 4.40). This indicates that training sessions were generally well-organized and properly managed. Trainer availability and management ranked highest, reflecting that trainers were accessible and effective in facilitating sessions. Time utilization was also rated high, indicating that training activities were completed on schedule with sufficient time for learning tasks.

The third statement of the problem revealed that the level of effectiveness of the training program was high (M = 4.44). This suggests that the program successfully delivers quality instruction and prepares trainees for the tourism industry. Alignment with tourism industry needs received the highest rating, indicating that the training provides relevant and job-ready skills. The quality of training was also rated high, reflecting that the program is well-structured and effectively integrates theoretical and practical learning.

The fourth statement of the problem indicated that respondents' level of competence was high (M = 4.42). This shows that trainees perceive themselves as capable in terms of knowledge, skills, and professional attitudes. Among the components, attitudinal or behavioral competence ranked highest, highlighting the importance of professionalism, teamwork, and positive work behavior. Knowledge competence was also rated high, indicating a strong understanding of industry concepts and practices.

The fifth statement of the problem revealed that the level of employability of graduates was high (M = 4.43). This indicates that respondents felt prepared for employment and confident in their abilities. They also expressed satisfaction with their career prospects and a willingness to continue learning and improving their skills.

The sixth statement of the problem showed that there is a significant positive relationship between employability and the variables of work environment, efficiency, effectiveness, and competence. This means that improvements in these factors are associated with higher employability. In particular, a supportive learning environment and competent trainers were found to strongly contribute to graduates' readiness for employment.

The seventh statement of the problem revealed that attitudinal or behavioral competence, technical skills, alignment with industry needs, quality of training, and time utilization significantly predict employability. The model explained about 86% of the variation in employability, indicating a strong influence of these factors. Among them, attitudinal competence emerged as the strongest predictor, followed by technical skills, highlighting the importance of both behavior and practical skills in securing employment.

Finally, the eighth statement of the problem identified Structural Model 5 as the best-fitting model. The results showed that competence, effectiveness, and work environment all positively influence employability, with competence as the strongest factor. This indicates that graduates' knowledge, skills, and professional attitudes play the most critical role in determining their employability, supported by effective training programs and a conducive learning environment.

Conclusions

Based on the findings of the study the following conclusions are drawn:

TESDA tourism training institutions provided a high-quality learning environment, as perceived by the respondents. Trainer competence, facilities, and equipment were rated particularly high, highlighting the importance of knowledgeable trainers and well-resourced training facilities in supporting skill acquisition and professional development

The training programs were perceived as efficiently conducted. Trainers' availability and management, as well as effective time utilization, were recognized as key factors enabling structured, well-organized, and productive training sessions that maximized learning outcomes.

The training programs were deemed highly effective in preparing graduates for the tourism industry. Alignment with industry needs and quality of instruction were particularly important, demonstrating that relevance to real-world tourism practices is crucial for enhancing employability.

The Graduates perceived themselves as highly competent, particularly in terms of attitudinal and behavioral competencies. Knowledge, technical skills, and professional attitudes were integral to ensuring graduates' readiness to perform effectively in tourism and hospitality roles.

Overall employability of TESDA tourism graduates reported confidence in their career prospects and a strong commitment to continuous learning, reflecting the successful preparation provided by TESDA training programs.

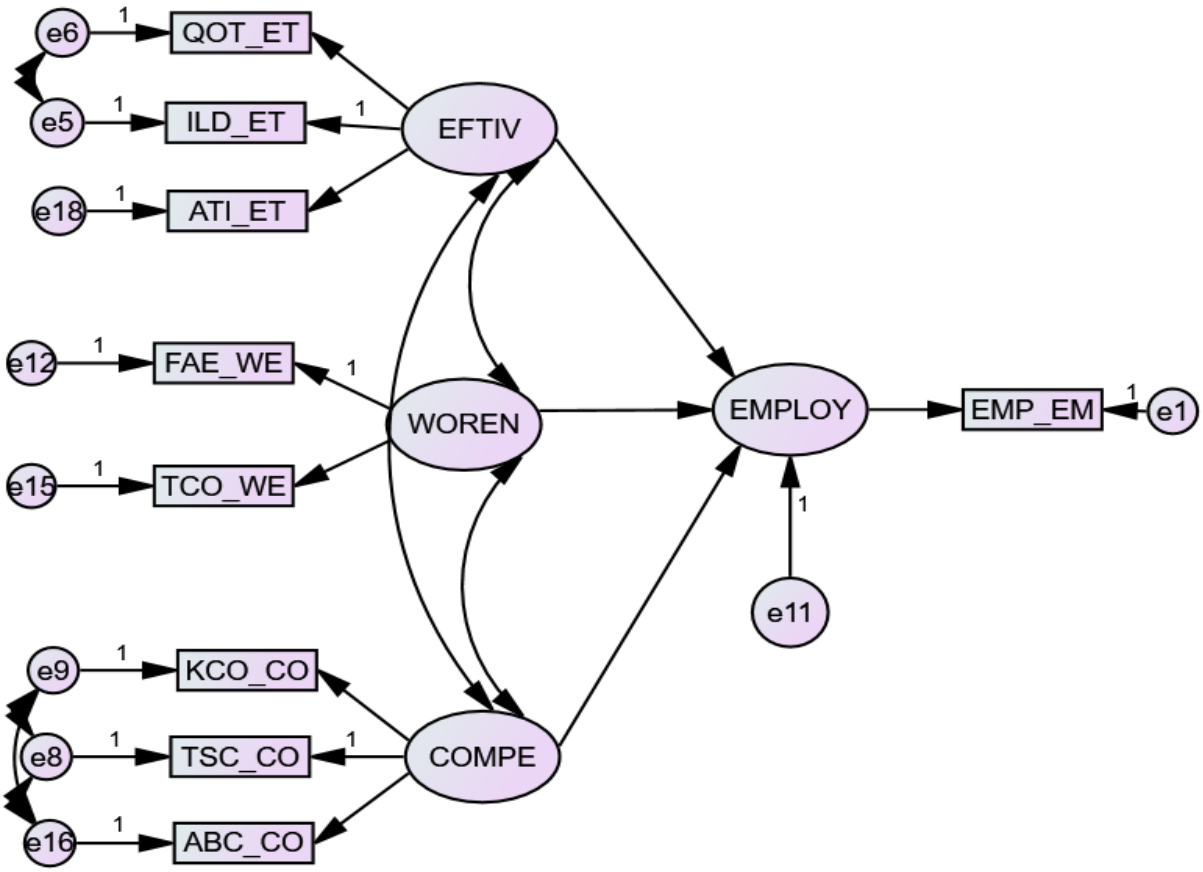
Pearson correlation analysis revealed significant positive relationships between employability and all predictors—work environment, efficiency, effectiveness, and competence. Competence, particularly attitudinal/behavioral and technical skills, showed the strongest association with employability, confirming its central role in workforce readiness.

Multiple regression analysis confirmed that attitudinal/behavioral competence, technical skills competence, alignment with tourism industry needs, and time utilization significantly predict employability. Notably, perceived quality of training showed a negative coefficient, indicating that employability depends more on

practical application, professional behavior, and industry alignment than subjective perceptions of training quality.

Among five hypothesized structural models, Structural Model 5 demonstrated the best Competence emerged as the strongest determinant of employability, followed by effectiveness and work environment. The model provides a robust theoretical and empirical framework for understanding employability outcomes, highlighting that competency development, effective program implementation, and a supportive learning environment collectively enhance graduates' readiness for the tourism labor market.

Best Fit Model Structural Model 5 of Emplloyability of TESDA Graduates



This model can be called "Melliger Gerona Structural Model on Employability of TESDA Graduates in Tourism Sector"

The study concludes that TESDA tourism graduates' employability is highly determined by their competencies, the effectiveness of training programs, and the quality of the learning environment. Holistic training that integrates knowledge acquisition, technical skill mastery, professional attitudes, and alignment with industry standards effectively prepares graduates for dynamic tourism labor markets. TESDA programs successfully enhance career readiness, job performance, and sustainable employability, emphasizing the importance of competency-based, industry-relevant vocational education.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are provided to enhance Work Environment, Efficeincy, Effectiveness amd Competency and Employability of TESDA Graduates in the Tourism Sector.

Technical Education and Skills Development Authority TESDA management may further strengthen its competency-based training framework by emphasizing the development of attitudinal/behavioral and technical competencies, which emerged as the strongest predictors of employability. Continuous evaluation of training effectiveness should be institutionalized through data-driven monitoring systems and tracer studies. Additionally, TESDA may enhance its quality assurance mechanisms and expand industry partnerships to ensure that training programs remain responsive to evolving labor market demands in the tourism sector.

TESDA and affiliated Technical-Vocational Institutions (TVIs) may refine their curricula by integrating industry-aligned, outcome-based learning approaches. Greater emphasis should be placed on experiential learning strategies such as internships, simulations, and work immersion programs to bridge the gap between training and actual job requirements. Institutions are also encouraged to adopt the validated structural model of this study as a guide in designing training interventions that enhance efficiency, effectiveness, and employability outcomes.

For TESDA and Training Institutions may sustain and improve the quality of their learning environments by investing in updated facilities, modern equipment, and continuous trainer development. Given the importance of time utilization and trainer management, institutions should implement structured training schedules and ensure adequate trainer availability to maximize learning efficiency. Furthermore, regular curriculum review and alignment with tourism industry standards should be prioritized.

For Employers and the Tourism Industry**.** Employers may collaborate closely with TESDA and TVIs in curriculum design, skills assessment, and on-the-job training programs. By providing industry input and real-world training opportunities, employers can help ensure that graduates acquire relevant competencies. Organizations should also prioritize hiring individuals with strong behavioral competencies, as these significantly influence job performance and employability.

Department of Labor and Employment (DOLE) may utilize the findings of this study as a basis for developing employment programs and policies that support TESDA graduates in securing gainful employment. Interventions such as job matching services, career coaching, and upskilling initiatives should be aligned with the identified predictors of employability to enhance workforce integration and productivity.

Policy Makers and Government Agencies may consider strengthening support for technical-vocational education by allocating resources for infrastructure development, trainer capacity-building, and industry collaboration initiatives. Policies that promote competency-based education, lifelong learning, and workforce adaptability are essential in building a competitive tourism workforce, particularly in emerging and rural regions.

For TESDA Graduates in the Tourism Sector may continuously develop their competencies, particularly in professional attitudes, communication skills, and technical expertise. Engaging in lifelong learning, skills upgrading, and industry certifications will further enhance their employability and career advancement opportunities in the dynamic tourism industry.

For the Academic Community and Future Researchers**.** Future researchers may replicate and extend this study in different regions or sectors to validate the proposed structural model. Further investigation into the unexpected negative relationship of perceived training quality with employability is also recommended. Moreover, longitudinal studies may be conducted to examine how competencies evolve over time and influence long-term career outcomes.

These recommendations highlight the need for a holistic, competency-driven, and industry-aligned approach in technical-vocational education. Strengthening collaboration among training institutions, industry stakeholders, and government agencies is essential to ensure that TESDA graduates remain competitive, adaptable, and responsive to the demands of the tourism labor market.

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MEL-ANN L. GERONA

MARCH 2026

APPROVAL SHEET

This thesis entitled **WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS AND COMPETENCIES: A STURCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN THE TOURISM SECTOR** in partial fulfilment of the requirements for the degree **DOCTOR IN MANAGEMENT** major in **LEADERSHIP ORGANIZATION**, prepared and submitted by **MEL-ANN L. GERONA** has been examined, accepted and recommended for Oral Examination.

DR. CRISTINE A. GEROY, D.M.

_____

Adviser

PANEL OF EXAMINERS

APPROVED in partial fulfillment of the requirements for the degree **DOCTOR IN MANAGEMENT** major in **LEADERSHIP ORGANIZATION** by the Panel of Examiners with a grade of _____.

DR. FELSA A. LABIS, Ph.D., REB, L.P.T.

_____

Chairman

EDZEN A. ESPINA, D.M., R.R.T., L.P.T. — Member

ZENAIDA G. GERSANA, Ph.D. — Member

MARIANO M. LERIN, Ph.D., C.P.A. — Member

NENITA I. PRADO, Ph.D. — Member

Comprehensive Examination: _____

DR. FELSA A. LABIS, Ph.D., REB, L.P.T.

Dean, School of Business, Management, and Accountancy

Certificate of Originality

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material to which to a substantial extent has been accepted for award of any other degree or diploma of a university or other institute of higher learning, except where due acknowledgement is made in the text.

I also declare that the intellectual content of this thesis is the product of my work, even though I may have received assistance from others on style, presentation and language expression.

MEL-ANN L. GERONA _____ _____

Signature of advisee over printed name — Date

CRISTINE A. GEROY, D.M. _____ _____

Signature of advisor over printed name — Date

GRAMMARLY TEST REPORT

(SCANNED Copy of Grammarly Test Report)

LAGIARISM DETECTOR REPORT

(SCANNED Copy of Plagiarism Detector Report)

ENGLISH WRITING READABILITY

(SCANNED Copy of English Writing Readability)

English Editing Certification Form

This is to certify that I have edited this thesis manuscript entitled **WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS AND COMPETENCY: A STRUCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN TOURISM SECTOR**

Prepared by:

MEL-ANN L. GERONA

and have found it thorough and acceptable with respect to grammar and composition.

CRISTINE A. GEROY, D.M.

Signature over printed name

Date

DEDICATION

This study is humbly dedicated to God, the source of all wisdom, strength, and grace. It is through His infinite goodness and unwavering guidance that I have persevered in this journey. His presence has illuminated every step, turning challenges into opportunities and doubts into faith. Truly, all accomplishments reflected in this work are a testament to His boundless love and mercy.

To my family—my husband, Abel, for his steadfast support and guidance; my children kuya ZD, Ate Abby, Bunso Angel, Inday Lady Jane for their constant encouragement and inspiration; and my mother, Recy, and Ate Milken for their support, comforting words and wise counsel— all your love and care mirror God's blessings in my life and have nurtured my heart and mind throughout this endeavor.

I also dedicate this work to my colleagues, trainers, and students at NMSF-TESDA, as well as all participants of this study. Your support, cooperation, and encouragement have been invaluable. To my friends and fellow Licean, thank you for walking this path alongside me.

May this work honor God's goodness and serve as a reflection of His grace manifested through the people and experiences that have supported me along the way.

Mel-ann

ACKNOWLEDGMENT

The journey of this dissertation has been both challenging and fulfilling, and it would not have been possible without the support and guidance of many individuals, to whom I am deeply grateful. I would like to express my deepest gratitude to everyone who has guided, supported, and inspired me throughout the journey of completing this dissertation.

First, I am profoundly thankful to my research adviser, Dr. Cristine Geroy, D.M., whose expertise, patience, and encouragement have been instrumental in shaping this study. Your guidance not only strengthened the research but also inspired me to grow as a scholar and researcher.

I am sincerely grateful to my panel of experts: Dr. Felsa A. Labis, Ph.D.; Dr. Nenita I. Prado, Ph.D.; Dr. Mariano M. Lerin, Ph.D., C.P.A.; Dr. Zenaida G. Gersana, Ph.D.; and Dr. Edzen A. Espina, D.M. Your valuable insights, constructive feedback, and professional guidance enriched the quality and rigor of this work.

To the staff and administration of Liceo especially Ma'am Eudeliza P. Anong who facilitated access to resources and provided logistical support, I am deeply greatful and appreciative of your assistance in ensuring this process ran smoothly. You make this journey pleasant and favorable.

I extend my heartfelt thanks to the NMSF - TESDA graduates, trainers, and administrators especially VSA Nancy C. De Guzman who supported me much and participated in this study. To my friends, and colleagues especially in my DHRT Diploma in Hotel and Restaurant Technology Department, thank you for your encouragement, and understanding during the challenges of this academic journey. Your cooperation, time, and willingness to share your experiences made this research possible, and your dedication to the tourism sector continues to inspire me.

To my family who supported me physically, morally, financially and spiritually my husnad Daddy Abel J. Gerona, my children Kuya Melchizedek (ZD), Ate Abegail, Bunso Angel Bliis, my beloved Mama Recy and Inday Lady Jane for your unwavering support and guidance when I feel weak and desperate. Your faith in me fueled my perseverance and determination to reach this milestone.

Above all to my God for the wisdom and strength poured upon me as I crafted my study. This dissertation is a product of the collective support, mentorship, and encouragement of all these remarkable individuals. To each of you, I dedicate my deepest appreciation and gratitude.

APPENDICES

APPENDIX A

LETTER OF CONSENT

Liceo de Cagayan University Research Ethics Review Committee
Informed Consent Form for Participants
Name of Principle Investigator: Mel-ann L. Gerona
Name of Organization: Northern Mindanao School of Fisheries - TESDA
Name of Sponsor: Self-funded
Name of Project/Study Title/Study Protocol and Version

WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS, AND COMPETENCY: A STRUCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN TOURISM SECTOR

Informed Consent Form

This Informed Consent Form had two parts:

• Information Sheet (to share information about the study with the participant)

• Certificate of Consent (for signatures of those who chose to participate)

A copy of the full Informed Consent Form was given to each participant.

PART I: INFORMATION SHEET

INTRODUCTION

This letter served as a formal request for the participants' time and participation in the study titled *"Work Environment, Efficiency, Effectiveness, and Competency: A Structural Model on Employability of TESDA*

Graduates in the Tourism Sector." The researcher, who was pursuing a Doctorate in Management degree at Liceo de Cagayan University's School of Business, Management, and Accountancy, aimed to investigate the level of competency of TESDA graduates in the tourism sector regarding training in the work environment, efficiency, effectiveness, and competency. The cooperation and honesty of the respondents in answering the survey were kindly requested, as these were crucial for obtaining reliable and accurate results essential for the study. All information provided was treated with strict confidentiality, and no companies or individuals were identified in any subsequent research reports. The gathered data were used solely for academic research purposes. The assistance and cooperation of the participants in this endeavor were greatly appreciated.

PURPOSE OF THE RESEARCH

The main goal of the study was to examine and investigate the extent to which these employability contributed to competencies outcomes, including employment status, job relevance, retention, and tenure in the tourism industry. By establishing these linkages, the study intended to provide empirical evidence that helped bridge the gap between training delivery and industry demands, thereby contributing to curriculum refinement, policy development, and workforce enhancement strategies for sustainable tourism growth.

TYPE OF RESEARCH INTERVENTION

The study employed a non-experimental, correlational, and model-testing research intervention through the use of Structural Equation Modeling (SEM). The intervention did not involve manipulating or introducing new training programs but rather focused on analyzing existing conditions and relationships among the variables—work environment, efficiency, effectiveness, competency, and employability—based on the perceptions and experiences of TESDA tourism graduates. By doing so, the research intervened at the level of knowledge generation and model development, producing an empirically tested framework that served as a policy and instructional intervention tool for curriculum enhancement, trainer development, and employability strategies within the tourism sector.

PARTICIPANT SELECTION

The participants of the study consisted of TESDA graduates in the tourism sector who had completed competency-based training programs and held a National Certificate (NC I, II, III, or IV). These graduates were either employed, self-employed, or had previous work experience in the tourism and hospitality industry to ensure that the study captured both training and employability dimensions.

The selection of participants was carried out through purposive sampling since the study required respondents who specifically met the following criteria:

1. Were graduates of TESDA tourism-related programs (e.g., housekeeping, food and beverage services, tour guiding, front office services, travel services, etc.).

2. Had obtained a corresponding National Certificate (NC) issued by TESDA.

3. Had been employed or engaged in tourism-related work for at least six months after graduation.

4. Were residing or working within the selected provinces/regions identified as the research setting.

The sample size was determined using power analysis and SEM sample adequacy guidelines (commonly at least 200–400 participants), ensuring the reliability and validity of the structural model. Participants were contacted through TESDA offices, partner training institutions, alumni networks, and tourism establishments that employed TESDA graduates.

VOLUNTARY PARTICIPATION

Participation in the study was entirely voluntary. Respondents were informed that they were free to decide whether or not to take part in the survey and that there would be no penalties or negative consequences for declining participation. They were also assured that they could withdraw from the study at any stage without providing any reason and without any impact on their relationship with TESDA, their training institutions, or their employers.

To ensure informed consent, participants received a clear explanation of the purpose of the study, the nature of their involvement, and the approximate time required to complete the questionnaire. They were also informed that the data collected would be used solely for academic and research purposes, with strict confidentiality and anonymity maintained at all times. By voluntarily agreeing to answer the survey, participants indicated their informed consent to participate in the study.

PROCEDURES

To collect valuable perspectives, the researcher personally distributed survey questionnaires either in printed form or via a QR code link. Participants were given sufficient time to complete the survey at their convenience, ideally during their free periods to prevent interference with their work. To guarantee the accuracy and effectiveness of the results, participants were asked to provide their best responses to all questions. Once all completed surveys were received, the data were methodically collected, organized, and coded using appropriate software.

DURATION

The survey was structured to require around 30–40 minutes for completion. However, participants who needed additional time to consider their responses were encouraged to take as long as necessary.

RISKS

There were no anticipated risks associated with participation in this research.

BENEFITS

The study was beneficial to various stakeholders in the field of technical-vocational education and the tourism sector. For TESDA and policymakers, the findings provided empirical evidence that guided the enhancement of training standards, curriculum alignment, and competency certification, ensuring that programs remained responsive to industry demands.

Training institutions and trainers benefited from insights on how facilities, instructional strategies, and management practices influenced efficiency, effectiveness, and graduate outcomes, thereby improving the quality of instruction and learning environments.

Employers in the tourism industry gained a clearer understanding of the competencies of TESDA graduates, enabling them to better align workforce needs with available skills. Likewise, TESDA graduates benefited from the identification of factors that strengthened their employability, job relevance, and career opportunities. Finally, future researchers found the validated structural model useful as a reference for further studies on competencies, employability, and workforce development in other sectors.

REIMBURSEMENTS/COMPENSATIONS

No monetary compensation was provided to the participants of the study. Participation was entirely voluntary, and respondents did not receive any payment, incentives, or rewards for taking part in the survey. However, as a gesture of appreciation, light refreshments or small tokens were given to participants during the data collection

process, depending on the setting and availability of resources. This ensured that participants did not incur any personal costs or inconveniences while contributing to the study.

CONFIDENTIALITY

The researcher acknowledged and adhered to the Data Privacy Act of 2012, guaranteeing the utmost confidentiality and anonymity of all data. The study maintained objectivity and honesty in handling the data collected on participants' proficiency in data visualization, perceived communication effectiveness, and decision-making efficiency within the organization. The data solely served the purpose of the research, and participants' identities were treated discreetly. Raw data were consolidated and securely stored within the researcher's facility, accessible only to the researcher. After six months, the retrieved questionnaires were destroyed. Participants had the right to access their own questionnaire/data or make necessary amendments when deemed necessary.

SHARING THE RESULTS

After collecting all required data, the researcher presented the findings of the study to the panel of evaluators. A printed version of the final report was generated and delivered to the School of Business, Management, and Accountancy at Liceo de Cagayan University. The research findings were disseminated widely through publications and conferences.

RIGHT TO REFUSE OR WITHDRAW

The researcher underscored that participants' involvement in the study was entirely voluntary. Participants had the freedom to decide whether or not to participate and could withdraw or discontinue participation in the study at any point.

WHO TO CONTACT?

For any questions or concerns, participants were encouraged to contact the researcher through:

Name of Researcher: Prof. Mel-ann L. Gerona

Email Address: magerona64634@liceo.edu.ph

Cell Number: +63-917-569-1579

Address: NMSF TESDA, Matabao, Buenavista, Agusan del Norte

PART II: CERTIFICATE OF CONSENT

Liceo de Cagayan University

School of Business, Management, and Accountancy

I had read the foregoing information, or it had been read to me. I had the opportunity to ask questions about it, and any questions I asked were answered to my satisfaction. I consented voluntarily to be a participant in this study.

Print Name of Participant: _____

Signature of Participant: _____

Date: [MM/DD/YYYY]

STATEMENT BY THE RESEARCHER OR PERSON TAKING CONSENT

I have accurately read out the information sheet to the potential participant and, to the best of my ability, made sure that the participant understood that the following were done:

1. The survey will be conducted online and sent to their respective Institution and Industry email address

2. The participants are invited to participate willingly or voluntarily, and have the rights to withdraw at any time.

3. All information collected will be kept conficdential.

I confirmed that the participant was given an opportunity to ask questions about the study and that all questions asked by the participant were answered correctly and to the best of my ability. I confirmed that the individual had not been coerced into giving consent and that the consent had been given freely and voluntarily.

A copy of this Informed Consent Form had been provided to the participant.

Print Name of Researcher or Person Taking Consent: Mel-ann L. Gerona

Signature of Researcher or Person Taking Consent: 

Date: October 30, 2025

The **LDCU Research Ethics Board (LDCU-REB)** had granted approval for this study. For inquiries regarding the rights of study participants, including grievances and complaints, participants could contact the following:

LICEO ETHICS BOARD

R.N. Pelaez Blvd., Kauswagan,

Cagayan de Oro City, Philippines 9000

Tel Nos.: (6388) 858-4093 to 95 Loc. 196

URL: http://www.liceo.edu.ph/

APPENDIX B

LETTER APPROVAL

LICEO DE CAGAYAN UNIVERSITY
Rodolfo N. Pelaez Boulevard, Kauswagan,
9000 Cagayan de Oro City, Philippines

October 23, 2025

DR. FELSA A. LABIS
Dean
School of Business, Management and Accountancy
Liceo de Cagayan University

Dear Dr. Labis:

Greetings!

I am a **MEL-ANN L. GERONA**, a Doctor in Management major in Leadership and Organization student at Liceo de Cagayan University School of Business, Management and Accountancy. As part of the major requirements of the above-mentioned degree, I am currently completing a study titled **"WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS, AND COMPETENCY: A STRUCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN TOURISM SECTOR"** For this study, I develop a research-made questionnaire and adopted questionnaire as my research tool.

The purpose of the study is to comprehensively examine the factors influencing employability of TESDA graduates in Tourism Sector in the Caraga Region. It aims to determine the work environment, efficiency, effectiveness and competency of the trainee during the conduct of training and its employability.

I am hoping for your kind approval and support to allow me to conduct the study in the said institutions.

Thank you so much.

Sincerely,

MEL-ANN L. GERONA
Student Researcher (DMLO)

Noted by:

CRISTINA A. GEROY, D.M.
Dissertation Adviser
School of Business, management and Accountancy

Approved:

DR. FELSA A. LABIS, LPT, REB
Dean, School of Business, management and Accountancy
Liceo de Cagayan University

LICEO DE CAGAYAN UNIVERSITY
Rodolfo N. Pelaez Boulevard, Kauswagan,
900 Cagayan de Oro City, Philippines

Ever Respected LREB:

Greetings!

I am Mel-ann L. Gerona, a student of Doctor in Management major in Leadership and Organization. I would like to respectfully request for Research Ethics Board Clearance for my study **"WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS, AND COMPETENCY: A STRUCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN TOURISM SECTOR".**

My study aims to comprehensively examine factors influencing employability of TESDA graduates in Tourism Sector in the Caraga Region. It aims to determine the work environment, efficiency, effectiveness and competency of the trainee during the conduct of training in the institution and its employability.

May I respectfully ask for the forms that are needed to comply with the requirements in obtaining LREB Clearance prior to data gathering procedure.

Thank you very much and more power.

Very respectfully yours,

MEL-ANN L. GERONA
Student Researcher (DML.O)

LICEO DE CAGAYAN UNIVERSITY
Rodolfo N. Pelaez Boulevard, Kauswagan,
900 Cagayan de Oro City, Philippines

LETTER OF CONSENT

Dear Respected Participants,

Greetings!

I am a **Mel-ann L. Gerona**, a Doctor in Management major in Leadership and Organization student at Liceo de Cagayan University School of Business, Management and Accountancy. As part of the major requirements of the above-mentioned degree, I am currently completing a study titled **"WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS, AND COMPETENCY: A STRUCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN TOURISM SECTOR"** For this study, I develop a research-made questionnaire and adopted questionnaire as my research tool.

The purpose of the study is to comprehensively examine factors influencing employability of TESDA graduates in Tourism Sector in the Caraga Region. It aims to determine the work environment, efficiency, effectiveness and competency of the trainee during the conduct of training in the institution and its employability.

I kindly request your cooperation and support in participating in my study. Your time and effort are crucial to the success of this research, and your honesty in completing the questionnaire will greatly enhance the accuracy of the results.

Thank you so much.

Sincerely,

MEL-ANN L. GERONA
Student Research (DMLO)

Noted by:

CRISTINA A. LEROY, D.M.
Dissertation Adviser
School of Business, Management and Accountancy
Liceo de Cagayan University

Approved by:

DR. FELSA A. LABIS, LPT REB
Dean, School of Business, Management and Accountancy
Liceo de Cagayan University

LICEO DE CAGAYAN UNIVERSITY
Rodolfo N. Pelaez Boulevard, Kauswagan,
900 Cagayan de Oro City, Philippines

October 23, 2025

ADELFA PACE
General Manager
Almont Hotel Inland Resort
J.C., Butuan City

Subject: Request for Permission to Conduct a Survey for Dissertation Research

Dear Madam Pace:

Greetings!

I am **Mel-ann L. Gerona**, a Doctor in Management major in Leadership and Organization student at Liceo de Cagayan University School of Business, Management and Accountancy. I am currently completing a study titled "WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS, AND COMPETENCY: A STRUCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN TOURISM SECTOR"

As part of my research requirements, I am conducting a survey through a structured questionnaire among employees in the tourism industry to gather relevant data on workplace conditions, competencies, and employability factors. In this regard, I respectfully seek your permission to distribute and administer the survey to selected employees in your organization who are TESDA graduates or currently working in the tourism-related sector.

Please be assured that the data collected will be used strictly for academic purposes only and will be treated with the utmost confidentiality and anonymity. No personal or company-identifiable information will be disclosed in any part of the study.

I would greatly appreciate your approval to allow the distribution of the questionnaire at your convenience. A copy of the questionnaire and endorsement letter from my adviser/university can be provided upon request.

Thank you very much for your time and kind consideration. I look forward to your favourable response.

Sincerely,

MEL-ANN L. GERONA
Student Researcher (DMLO)

Endorsed by:

CRISTINA A. GEROY, D.M.
Dissertation Adviser
School of Business, Management and Accountancy

LICEO DE CAGAYAN UNIVERSITY
Rodolfo N. Pelaez Boulevard, Kauswagan,
900 Cagayan de Oro City, Philippines

October 23, 2025

NANCY C. DE GUZMAN, MPA
Vocational School Administrator III
Northern Mindanao School of Fisheries - TESDA
Mahinog, Buenaventura Aguisan del Norte

Dear Dr. Santos:

Greetings!

I am **Mel-ann L. Gerona**, a Doctor in Management major in Leadership and Organization student at Liceo de Cagayan University School of Business, Management and Accountancy. I am currently completing a study titled **"WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS, AND COMPETENCY: A STRUCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN TOURISM SECTOR"**

As part of my research requirements, I have developed a questionnaire to gather relevant data for analysis. To ensure its validity and reliability, I am seeking the expertise of professionals in the field for validation. Given your extensive knowledge and experience in business management, education, and administration. I respectfully request your assistance in evaluating my questionnaire in terms of clarity, relevance, and comprehensiveness.

Should you accept this request, I will provide you with the necessary documents, including the questionnaire and validation criteria, at your earliest convenience. Your insights and recommendations will be invaluable in refining my research instrument.

I truly appreciate your time and expertise. Please let me know a convenient time to discuss this further or if you require additional information. I look forward to your positive response.

Thank you for your time and consideration.

Sincerely,

MEL-ANN L. GERONA
Student Researcher (DMLO)

Endorsed by:

CRISTINA A. GEROY, D.M.
Dissertation Adviser
School of Business, Management and Accountancy

LICEO DE CAGAYAN UNIVERSITY
Rodolfo N. Pelaez Boulevard, Kauswagan,
900 Cagayan de Oro City, Philippines

October 23, 2025

GEMMA FE A. BALANAY, MSc., LPT
Vocational Instruction Supervisor
Northern Mindanao School of Fisheries - TESDA
Malaloan, Buenavista Agusan del Norte

Dear Dr. Santos:

Greetings!

I am **Mel-ann L. Gerona**, a Doctor in Management major in Leadership and Organization student at Liceo de Cagayan University School of Business, Management and Accountancy. I am currently completing a study titled **"WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS, AND COMPETENCY: A STRUCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN TOURISM SECTOR"**

As part of my research requirements, I have developed a questionnaire to gather relevant data for analysis. To ensure its validity and reliability, I am seeking the expertise of professionals in the field for validation. Given your extensive knowledge and experience in business management, education, and administration. I respectfully request your assistance in evaluating my questionnaire in terms of clarity, relevance, and comprehensiveness.

Should you accept this request, I will provide you with the necessary documents, including the questionnaire and validation criteria, at your earliest convenience. Your insights and recommendations will be invaluable in refining my research instrument.

I truly appreciate your time and expertise. Please let me know a convenient time to discuss this further or if you require additional information. I look forward to your positive response.

Thank you for your time and consideration.

Sincerely,

MEL-ANN L. GERONA
Student Researcher (DMLO)

Endorsed by:

CRISTINA A. GEROY, D.M.
Dissertation Adviser
School of Business, Management and Accountancy

LICEO DE CAGAYAN UNIVERSITY
Rodolfo N. Pelaez Boulevard, Kauswagan,
900 Cagayan de Oro City, Philippines

October 23, 2025

MARIFE A. PENA, MHE, LPT
Regional Training Center Administrator
RTC – Technical Education and Skills Development Authority
Bagualan, Butuan City

Dear Dr. Santos:

Greetings!

I am **Mel-ann L. Gerona**, a Doctor in Management major in Leadership and Organization student at Liceo de Cagayan University School of Business, Management and Accountancy. I am currently completing a study titled **"WORK ENVIRONMENT, EFFICIENCY, EFFECTIVENESS, AND COMPETENCY: A STRUCTURAL MODEL ON EMPLOYABILITY OF TESDA GRADUATES IN TOURISM SECTOR"**

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Endorsed by:

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Dissertation Adviser
School of Business, Management and Accountancy

Appendix C

Survey Questionnaire

Greetings! Your valuable insights are sought for a significant research endeavor aimed to know the level of competency of TESDA graduates in terms of employment. This research, "Work Environment, Efficiency, Effectiveness and Competency: A Structural Model on Employability of TESDA Graduates in Tourism Sector," examines it's effectiveness of the training.

This dissertation examines how work environment, efficiency, effectiveness and competency can improve the level of employability of TESDA graduates. Your insights, experiences, and opinions helps to develop this study successfully, Liceo de Cagayan University School of Business, Management, and Accountancy 211

Instructions:
Please respond to each question thoughtfully and to the best of your knowledge and experience. For Likert scale questions, choose the response that best reflects your opinion or level of agreement. Open-ended question will be provided in the last portion for you to express your views in more detail.

Response Scale:

5 - Strongly Agree 4 - Agree 3 – Neutral 2 - Disagree 1 - Strongly Disagree

WORK ENVIRONMENT						
No.	**Statement**	**5**	**4**	**3**	**2**	**1**
Facilities and Equipment						
1	The training facility was well-equipped and conducive to learning.					
2	Training tools and equipment were updated and functional.					
3	Materials were sufficient for all trainees.					
4	Classrooms and laboratories were well-maintained.					
5	Practical facilities simulated real workplace settings.					
6	Safety standards were observed in training facilities.					
7	Technology (computers, projectors) supported learning.					
8	Training spaces were comfortable and safe.					
9	Facilities supported both theory and practice.					
10	Overall, the facilities enhanced training quality.					

No	**Statement**	**5**	**4**	**3**	**2**	**1**
Trainer Competence						
1	Trainers demonstrated strong knowledge in their field.					
2	Trainers applied practical expertise in tourism services.					
3	Trainers explained lessons clearly and effectively.					
4	Trainers used real-world examples in teaching.					
5	Trainers provided constructive feedback.					
6	Trainers encouraged active trainee participation.					
7	Trainers assessed competencies effectively.					
8	Trainers continuously updated their skills.					

9	Trainers demonstrated professionalism and ethics.					
10	Overall, trainers were highly competent.					

No.	Statement	5	4	3	2	1
Learning Atmosphere						
1	The learning atmosphere was supportive and motivating.					
2	Trainees felt respected and valued.					
3	Collaboration among trainees was encouraged.					
4	The environment promoted enjoyable learning.					
5	Open communication was encouraged.					
6	Diversity and inclusivity were observed.					
7	The atmosphere encouraged critical thinking.					
8	Trainers and trainees had positive relationships.					
9	Healthy competition motivated learning.					
10	Overall, the atmosphere supported effective learning.					

EFFICIENCY						
No.	**Statement**	**5**	**4**	**3**	**2**	**1**
Time Utilization						
\1	Training sessions started and ended on time.					
2	Time allocation per topic was sufficient.					
3	Practical activities had enough time for mastery.					
4	No significant time was wasted in training.					
5	Pacing of sessions was appropriate.					
6	Breaks were scheduled appropriately.					
7	The training adhered to the planned calendar.					
8	Group tasks were completed on time.					
9	Time for assessments was properly managed.					
10	Overall, time was utilized effectively.					

No.	Statement	5	4	3	2	1
Trainer Availability and Management						
1	Trainers were available when needed.					
2	Trainers managed sessions effectively.					
3	Trainers were punctual.					
4	Trainers ensured topics were fully covered.					
5	Trainers provided timely feedback.					

6	Trainers managed group activities well.					
7	Trainers were approachable outside class hours.					
8	Trainers responded to trainee concerns promptly.					
9	Trainers ensured equal attention to trainees.					
10	Overall, trainer management was effective.					

No.	Statement	5	4	3	2	1
Use of Instructional Materials						
1	Materials were updated and relevant.					
2	Instructional materials were easy to understand.					
3	Modules were comprehensive.					
4	Multimedia resources enriched learning.					
5	Manuals supported hands-on training.					
6	Digital resources were accessible.					
7	Materials supported both theory and practice.					
8	Materials were distributed on time.					
9	Instructional materials improved my learning.					
10	Overall, instructional materials enhanced training quality.					

EFFECTIVENESS						
No.	**Statement**	**5**	**4**	**3**	**2**	**1**
Quality of Training						
1	Training content was high quality.					
2	Training objectives were clearly met.					
3	The balance of theory and practice improved learning.					
4	The program addressed industry standards.					
5	Teaching methods facilitated learning effectively.					
6	The training maintained professional standards.					
7	Evaluation methods reflected learning outcomes.					
8	Sessions were delivered consistently.					
9	The program exceeded my expectations.					
10	Overall, the training was of high quality.					

No.	Statement	5	4	3	2	1
Impact on Learner Development						
1	Training improved my confidence.					

2	Training developed my problem-solving skills.					
3	I became more adaptable at work.					
4	I improved teamwork skills.					
5	I enhanced leadership skills.					
6	I developed decision-making skills.					
7	My communication skills improved.					
8	Training enhanced my professionalism.					
9	I improved my customer service skills.					
10	Overall, training had a positive impact on me.					

No.	**Statement**	**5**	**4**	**3**	**2**	**1**
Alignment with Tourism Industry Needs						
1	Training addressed industry standards.					
2	Activities reflected real-world practices.					
3	The curriculum was updated for industry changes.					
4	Skills acquired matched job requirements.					
5	Employers value my acquired skills.					
6	Training strengthened industry-specific competencies.					
7	The program prepared me for tourism careers.					
8	Training included sustainable tourism practices.					
9	Training prepared me for future tourism trends.					
10	Overall, training aligned with industry needs.					

COMPETENCY						
No.	**Statement**	**5**	**4**	**3**	**2**	**1**
Knowledge Competence						
1	I understand the fundamental theories and concepts related to the tourism / hospitality industry.					
2	I am knowledgeable about the standards and regulations applied in tourism operations.					
3	I can explain the basic procedures in customer service and guest relations.					
4	I have a good understanding of workplace safety and sanitation practices.					
5	I can analyze and solve problems using the knowledge I acquired during my training.					
6	I am familiar with the laws and ethical guidelines relevant to the tourism sector.					
7	I can apply theoretical knowledge to real-life situations in the workplace.					

8	I am aware of the latest trends and technologies used in the tourism industry.					
9	I understand the importance of sustainability and cultural sensitivity in tourism services.					
10	I can clearly communicate tourism-related information to clients and colleagues.					

No.	Statement	5	4	3	2	1
Technical Skills Competence						
1	I can perform the basic tasks required in my field of specialization (e.g., front office, housekeeping, tour guiding).					
2	I am skilled in using equipment and tools relevant to my tourism job.					
3	I can operate computer applications or reservation systems used in the tourism industry.					
4	I can handle customer transactions accurately and efficiently.					
5	I can provide quality service that meets or exceeds customer expectations.					
6	I can apply standard operating procedures effectively in my workplace.					
7	I am capable of multitasking while maintaining work quality.					
8	I can adapt my technical skills to new tools or systems introduced in the industry.					
9	I can identify and correct errors in performing job-related tasks.					
10	I can complete tasks independently with minimal supervision.					

No.	Statement	5	4	3	2	1
Attitudinal or Behavioral Competence						
1	I demonstrate a positive attitude toward my work and responsibilities.					
2	I show respect and courtesy to colleagues, supervisors, and clients.					
3	I take initiative in performing tasks without waiting to be told.					
4	I can manage my emotions and stay calm in stressful situations.					
5	I am punctual and consistent in attending work or training sessions.					
6	I willingly cooperate with team members to achieve shared goals.					
7	I accept constructive criticism and use it to improve my performance.					

8	I maintain honesty and integrity in carrying out my duties.					
9	I demonstrate cultural awareness and sensitivity when interacting with diverse clients.					
10	I continuously seek opportunities for personal and professional growth.					

EMPLOYABILITY						
No.	**Statement**	**5**	**4**	**3**	**2**	**1**
1	I can easily find employment related to my TESDA qualification.					
2	I possess the necessary skills that employers look for in the tourism industry.					
3	My training prepared me to meet the demands of the job market.					
4	I can confidently apply for job positions in my field of specialization.					
5	I can adapt quickly to new work environments and company policies.					
6	I receive positive feedback from my supervisors regarding my job performance.					
7	I can perform assigned tasks with minimal supervision.					
8	I am capable of working well under pressure and meeting deadlines.					
9	I can communicate effectively with clients and colleagues in the workplace.					
10	I am confident in making decisions related to my job responsibilities.					
11	I am able to demonstrate leadership and initiative in the workplace.					
12	I am willing to learn new skills and upgrade my qualifications when necessary.					
13	I maintain professional relationships that support my career growth.					
14	I believe my current job matches my training and competencies.					
15	I am satisfied with my overall employability and career prospects.					

Open-Ended Question:

Any comments about Work Environment, Efficiency, Effectiveness and Competency: A structural Model on Employability TESDA Graduates in Tourism Sector.

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Answer:

Thank you for your valuable input!

APPENDIX D

RELIABILITY TESTING

November 4, 2025

Researcher: **MEL-ANN L. GERONA**

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Items	Cronbach's Alpha	N of Items
Facilities and Equipment	.956	10
Trainer Competence	.902	10
Learning Atmosphere	.926	10
Time Utilization	.950	10
Trainer Availability and Management	.942	10
Use of Instructional Materials	.965	10
Quality of Training	.969	10
Impact on Learner Development	.974	10
Alignment with Tourism Industry Needs	.963	10
Knowledge Competence	.935	10
Technical Skills Competence	.963	10
Attitudinal or Behavioral Competence	.962	10
EMPLOYABILITY	.867	15

Interpretation: Reliable

Decision: Proceed to the administration of survey questionnaire.

Bernard A. Gutierrez
Data Processor

Facilities and Equipment

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
WEFAE1	42.83	17.868	.821	.952
WEFAE2	43.00	16.690	.818	.950
WEFAE3	43.03	15.206	.878	.949
WEFAE4	42.97	16.309	.827	.950
WEFAE5	42.97	15.344	.874	.949
WEFAE6	42.83	17.247	.831	.950
WEFAE7	42.80	17.131	.775	.952
WEFAE8	42.87	18.395	.597	.958
WEFAE9	42.83	17.109	.871	.949
WEFAE10	42.87	16.740	.928	.947

Trainer Competence

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
WETC1	43.17	7.937	.758	.885
WETC2	43.10	8.507	.800	.886
WETC3	43.23	7.702	.784	.883
WETC4	43.23	7.495	.753	.887
WETC5	43.17	8.557	.637	.894
WETC6	43.20	8.372	.676	.891
WETC7	43.10	8.783	.653	.894
WETC8	43.23	8.461	.803	.886
WETC9	43.13	9.154	.411	.908
WETC10	43.13	8.878	.539	.899

Learning Atmosphere

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
WELA1	43.50	8.328	.825	.924
WELA2	43.47	8.189	.735	.917
WELA3	43.43	8.599	.595	.925
WELA4	43.47	8.189	.735	.917
WELA5	43.40	8.800	.556	.926
WELA6	43.37	8.171	.752	.917
WELA7	43.43	8.323	.731	.918
WELA8	43.43	7.702	.840	.911
WELA9	43.47	7.637	.819	.913
WELA10	43.43	8.254	.785	.916

Time Utilization

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ETU1	41.77	15.013	.888	.941
ETU2	41.67	15.264	.831	.943
ETU3	41.80	15.352	.846	.942
ETU4	41.63	15.964	.868	.950
ETU5	41.57	16.254	.752	.947
ETU6	41.70	15.872	.771	.946
ETU7	41.77	15.220	.816	.944
ETU8	41.73	14.961	.887	.940
ETU9	41.80	16.662	.605	.952
ETU10	41.67	15.678	.841	.943

Trainer Availability and Management

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ETAAM1	42.80	10.648	.589	.946
ETAAM2	42.77	10.461	.798	.934
ETAAM3	42.77	10.599	.748	.937
ETAAM4	42.70	10.631	.809	.934
ETAAM5	42.80	10.303	.829	.932
ETAAM6	42.67	11.057	.688	.939
ETAAM7	42.70	10.700	.782	.935
ETAAM8	42.63	11.068	.743	.937
ETAAM9	42.70	10.562	.836	.932
ETAAM10	42.67	10.644	.857	.932

Use of Instructional Materials

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
EUOIM1	41.90	22.990	.738	.965
EUOIM2	41.77	22.668	.843	.962
EUOIM3	41.77	22.392	.801	.963
EUOIM4	41.80	22.579	.846	.962
EUOIM5	41.80	21.407	.889	.960
EUOIM6	41.83	21.316	.897	.960
EUOIM7	41.70	22.700	.884	.961
EUOIM8	41.80	21.614	.852	.961
EUOIM9	41.77	22.254	.828	.962
EUOIM10	41.77	22.530	.873	.961

Quality of Training

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
EQOT1	42.80	18.855	.813	.968
EQOT2	42.80	17.959	.911	.964
EQOT3	42.70	19.183	.867	.966
EQOT4	42.77	17.978	.939	.963
EQOT5	42.77	17.978	.939	.963
EQOT6	42.80	18.648	.885	.966
EQOT7	42.87	18.533	.835	.967
EQOT8	42.93	18.133	.794	.969
EQOT9	42.90	18.714	.773	.969
EQOT10	42.77	18.254	.873	.965

Impact on Learner Development

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
EIOLD1	43.60	10.248	.710	.976
EIOLD2	43.60	10.248	.710	.976
EIOLD3	43.57	9.909	.959	.969
EIOLD4	43.57	9.909	.959	.969
EIOLD5	43.57	9.909	.959	.969
EIOLD6	43.57	9.909	.959	.969
EIOLD7	43.60	9.903	.867	.971
EIOLD8	43.63	9.206	.911	.971
EIOLD9	43.57	9.909	.959	.969
EIOLD10	43.63	9.275	.884	.972

Alignment with Tourism Industry Needs

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
EAWTIN1	43.67	8.782	.870	.958
EAWTIN2	43.60	9.214	.785	.961
EAWTIN3	43.60	9.214	.989	.953
EAWTIN4	43.63	9.275	.885	.956
EAWTIN5	43.63	8.861	.880	.957
EAWTIN6	43.57	9.633	.876	.957
EAWTIN7	43.57	9.633	.876	.957
EAWTIN8	43.53	10.189	.694	.964
EAWTIN9	43.53	10.189	.694	.964
EAWTIN10	43.57	9.633	.876	.957

Knowledge Competence

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CKC1	44.00	5.034	.856	.923
CKC2	44.00	5.034	.856	.923
CKC3	44.00	5.172	.745	.928
CKC4	43.97	5.413	.697	.931
CKC5	44.03	4.999	.784	.927
CKC6	44.10	5.059	.588	.946
CKC7	44.00	5.448	.533	.938
CKC8	44.00	5.103	.800	.925
CKC9	44.03	4.792	.917	.919
CKC10	43.97	5.344	.760	.928

Technical Skills Competence

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CTSC1	43.00	13.310	.793	.961
CTSC2	43.13	11.844	.809	.961
CTSC3	43.10	11.886	.947	.954
CTSC4	43.10	11.955	.924	.955
CTSC5	43.10	11.955	.924	.955
CTSC6	43.10	12.507	.900	.956
CTSC7	43.13	13.016	.681	.964
CTSC8	43.03	12.861	.892	.957
CTSC9	43.07	13.099	.735	.962
CTSC10	43.03	13.068	.809	.960

Attitudinal or Behavioral Competence

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CAOBC1	44.03	6.999	.730	.961
CAOBC2	44.03	6.309	.890	.956
CAOBC3	44.03	6.723	.920	.954
CAOBC4	44.10	6.093	.863	.959
CAOBC5	44.10	6.783	.681	.964
CAOBC6	44.03	6.723	.920	.954
CAOBC7	44.03	6.999	.730	.961
CAOBC8	44.00	6.966	.927	.956
CAOBC9	44.00	6.966	.927	.956
CAOBC10	44.03	6.723	.920	.954

EMPLOYABILITY

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E1	69.00	4.690	.507	.881
E2	69.00	4.552	.608	.864
E3	68.90	4.990	.888	.855
E4	69.03	4.516	.564	.868
E5	68.93	5.444	.050	.890
E6	68.93	5.513	-.008	.882
E7	68.97	4.447	.798	.843
E8	68.93	5.030	.416	.884
E9	68.90	5.197	.406	.884
E10	68.90	4.990	.888	.855
E11	68.93	4.616	.814	.845
E12	68.90	4.990	.888	.855
E13	68.93	5.030	.416	.884
E14	68.93	4.823	.611	.855
E15	68.93	4.616	.814	.845

Note:

Kindly delete from your instrument the highlighted variables because these are not reliable items.

Other Appendices

Descriptive Statistics			
	N	Mean	Std. Deviation
WEFAE1	396	4.4924	.65017
WEFAE2	396	4.4242	.64185
WEFAE3	396	4.3788	.72073
WEFAE4	396	4.4015	.71007
WEFAE5	396	4.4369	.64714
WEFAE6	396	4.4798	.66149
WEFAE7	396	4.4369	.65492
WEFAE8	396	4.4242	.70213
WEFAE9	396	4.4141	.65619
WEFAE10	396	4.4924	.63839
FAE_WE	396	4.4381	.57557
WETC1	396	4.5025	.64238
WETC2	396	4.4823	.63819
WETC3	396	4.4444	.68580
WETC4	396	4.4823	.63819
WETC5	396	4.4268	.66538
WETC6	396	4.4596	.65672
WETC7	396	4.4293	.66184
WETC8	396	4.4848	.65004
WETC9	396	4.4672	.67986
WETC10	396	4.4924	.65406
TCO_WE	396	4.4672	.58762
WELA1	396	4.4369	.66260
WELA2	396	4.4495	.66749
WELA3	396	4.4444	.66328
WELA4	396	4.4116	.70064
WELA5	396	4.4419	.67817
WELA6	396	4.4167	.67926
WELA7	396	4.4091	.65936
WELA8	396	4.4015	.72069
WELA9	396	4.4596	.68317
WELA10	396	4.4646	.65701
LEA_WE	396	4.4336	.60726
WORKENVI	396	4.4465	.56814
ETU1	396	4.4419	.68927
ETU2	396	4.3687	.72246
ETU3	396	4.3990	.69165
ETU4	396	4.3687	.67537
ETU5	396	4.3788	.68099
ETU6	396	4.3636	.70016
ETU7	396	4.4040	.67384
ETU8	396	4.4015	.69566
ETU9	396	4.4621	.68701
ETU10	396	4.4520	.66768
TUT_EF	396	4.4040	.60678
ETAAM1	396	4.3939	.70540
ETAAM2	396	4.4066	.67043

ETAAM3	396	4.3965	.67647
ETAAM4	396	4.4116	.70064
ETAAM5	396	4.4066	.67794
ETAAM6	396	4.4268	.65772
ETAAM7	396	4.4268	.68414
ETAAM8	396	4.4066	.67043
ETAAM9	396	4.4066	.69636
ETAAM10	396	4.4268	.71313
TAM_EF	396	4.4109	.61825
EUOIM1	396	4.4343	.68859
EUOIM2	396	4.4091	.67454
EUOIM3	396	4.3460	.68548
EUOIM4	396	4.3864	.67108
EUOIM5	396	4.4318	.66591
EUOIM6	396	4.3586	.70276
EUOIM7	396	4.4167	.66418
EUOIM8	396	4.3485	.68972
EUOIM9	396	4.3838	.68187
EUOIM10	396	4.4116	.68234
UIM_EF	396	4.3927	.61312
EFFICIENCY	396	4.4026	.59583
EQOT1	396	4.4343	.66617
EQOT2	396	4.4343	.63901
EQOT3	396	4.4091	.68201
EQOT4	396	4.4141	.66386
EQOT5	396	4.4116	.67112
EQOT6	396	4.4192	.66068
EQOT7	396	4.4192	.66068
EQOT8	396	4.3813	.69614
EQOT9	396	4.3939	.66854
EQOT10	396	4.4419	.66307
QOT_ET	396	4.4159	.60364
EIOLD1	396	4.4747	.69491
EIOLD2	396	4.4318	.67347
EIOLD3	396	4.4192	.64908
EIOLD4	396	4.4167	.66798
EIOLD5	396	4.3737	.71633
EIOLD6	396	4.4192	.67207
EIOLD7	396	4.3914	.69050
EIOLD8	396	4.4293	.67321
EIOLD9	396	4.4192	.66068
EIOLD10	396	4.4722	.63384
ILD_ET	396	4.4247	.60558
EAWTIN1	396	4.4798	.62610
EAWTIN2	396	4.4697	.61754
EAWTIN3	396	4.4495	.63244
EAWTIN4	396	4.4697	.61754
EAWTIN5	396	4.4369	.65877
EAWTIN6	396	4.4646	.64534
EAWTIN7	396	4.4520	.62051
EAWTIN8	396	4.4672	.63360

EAWTIN9	396	4.4773	.62601
EAWTIN10	396	4.4949	.61416
ATI_ET	396	4.4662	.57330
EFFECTIVEN	396	4.4357	.57087
CKC1	396	4.4672	.62150
CKC2	396	4.4116	.62825
CKC3	396	4.4066	.64345
CKC4	396	4.4823	.61392
CKC5	396	4.4318	.64270
CKC6	396	4.3737	.65736
CKC7	396	4.4369	.62323
CKC8	396	4.4217	.63758
CKC9	396	4.4369	.64714
CKC10	396	4.4242	.63789
KCO_CO	396	4.4293	.56997
CTSC1	396	4.4470	.62821
CTSC2	396	4.3434	.67747
CTSC3	396	4.3611	.67760
CTSC4	396	4.3737	.66881
CTSC5	396	4.3889	.66009
CTSC	396	4.4192	.64908
CTSC7	396	4.3965	.64974
CTSC8	396	4.3864	.65194
CTSC9	396	4.3889	.64849
CTSC10	396	4.4242	.62587
TSC_CO	396	4.3929	.59099
CAOBC1	396	4.4823	.62212
CAOBC2	396	4.4697	.62569
CAOBC3	396	4.4394	.62348
CAOBC4	396	4.4268	.64607
CAOBC5	396	4.3813	.65104
CAOBC6	396	4.4268	.66917
CAOBC7	396	4.4217	.65327
CAOBC8	396	4.4520	.63263
CAOBC9	396	4.4318	.61861
CAOBC10	396	4.4545	.62881
ABC_CO	396	4.4386	.58074
COMPETENCE	396	4.4202	.55951
E1	396	4.4444	.66709
E2	396	4.4066	.64738
E3	396	4.4343	.64296
E4	396	4.4343	.65079
E5	396	4.4217	.66480
E6	396	4.4318	.64270
E7	396	4.4192	.64908
E8	396	4.4116	.64417
E9	396	4.4116	.64417
E10	396	4.4545	.64471
E11	396	4.4369	.63130
E12	396	4.3939	.62954
E13	396	4.4470	.62821

EMP_EM	396	4.4267	.57986
Valid N (listwise)	396		

OBJECTIVE 6

Correlations

		EMP_EM	WORKENVI	EFFICIENCY	EFFECTIVEN	COMPETENCE
FAE_WE	Pearson Correlation	.695**	.951**	.862**	.827**	.732**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
TCO_WE	Pearson Correlation	.718**	.968**	.895**	.876**	.757**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
LEA_WE	Pearson Correlation	.732**	.968**	.916**	.877**	.768**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
WORKENVI	Pearson Correlation	.743**	1	.926**	.894**	.782**
	Sig. (2-tailed)	.000		.000	.000	.000
TUT_EF	Pearson Correlation	.762**	.921**	.973**	.913**	.798**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
TAM_EF	Pearson Correlation	.747**	.900**	.978**	.910**	.793**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
UIM_EF	Pearson Correlation	.755**	.882**	.965**	.928**	.809**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
EFFICIENCY	Pearson Correlation	.776**	.926**	1	.943**	.823**
	Sig. (2-tailed)	.000	.000		.000	.000
QOT_ET	Pearson Correlation	.768**	.887**	.944**	.965**	.840**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
ILD_ET	Pearson Correlation	.778**	.866**	.913**	.968**	.823**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
ATI_ET	Pearson Correlation	.844**	.821**	.859**	.949**	.889**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
EFFECTIVEN	Pearson Correlation	.829**	.894**	.943**	1	.885**
	Sig. (2-tailed)	.000	.000	.000		.000
KCO_CO	Pearson Correlation	.873**	.782**	.826**	.878**	.966**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
TSC_CO	Pearson Correlation	.881**	.721**	.769**	.829**	.967**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
ABC_CO	Pearson Correlation	.902**	.758**	.785**	.852**	.959**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
COMPETENCE	Pearson Correlation	.918**	.782**	.823**	.885**	1

	Sig. (2-tailed)	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

b. Listwise N=396

CORRELATION TABLE SUMMARY

	EMP_EM	
	R-VALUE	PROBABILITY
FAE_WE	.695	.000**
TCO_WE	.718	.000**
LEA_WE	.732	.000**
WORKENVI	.743	.000**
TUT_EF	.762	.000**
TAM_EF	.747	.000**
UIM_EF	.755	.000**
EFFICIENCY	.776	.000**
QOT_ET	.768	.000**
ILD_ET	.778	.000**
ATI_ET	.844	.000**
EFFECTIVEN	.829	.000**
KCO_CO	.873	.000**
TSC_CO	.881	.000**
ABC_CO	.902	.000**
COMPETENCE	.918	.000**

**. Correlation is significant at the 0.01 level (2-tailed).

Regression

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.928[e]	.861	.859	.21755

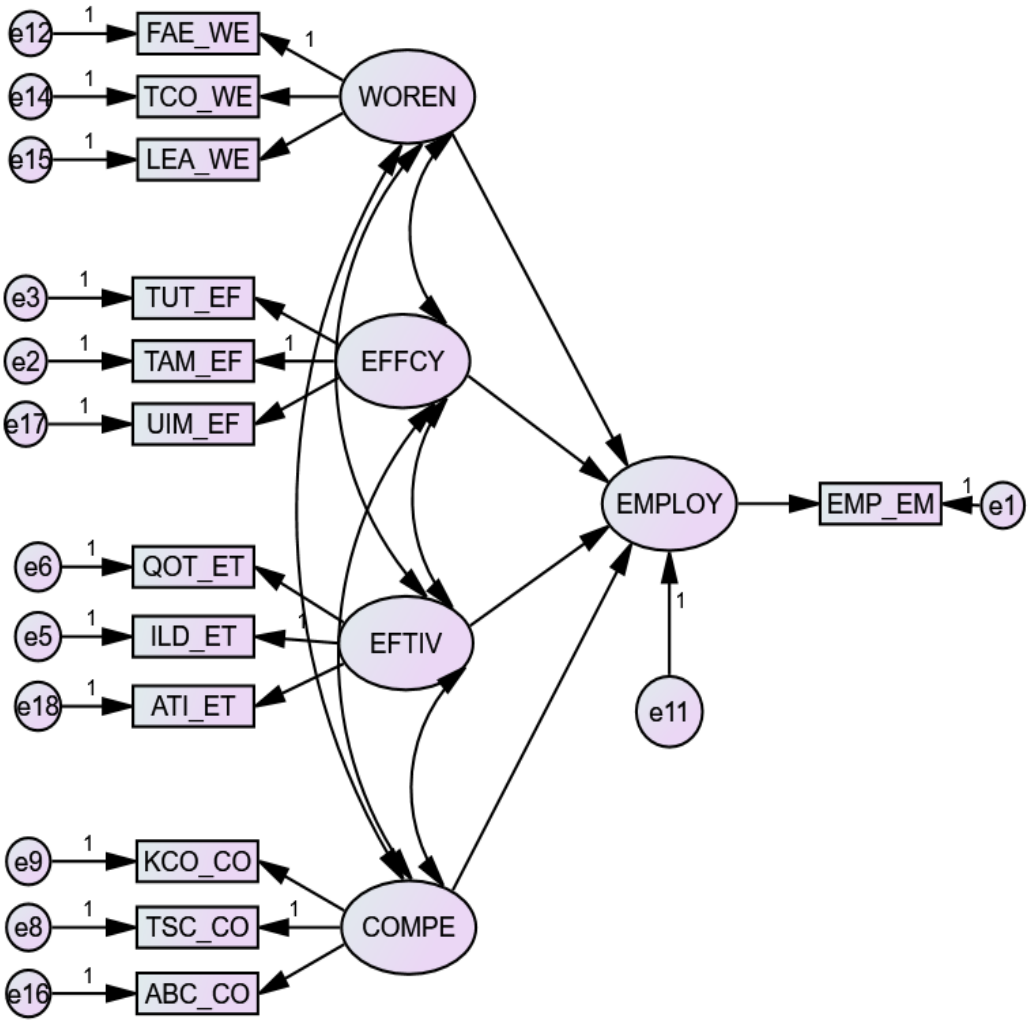
ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	114.353	5	22.871	483.216	.000[f]
	Residual	18.459	390	.047		
	Total	132.812	395			

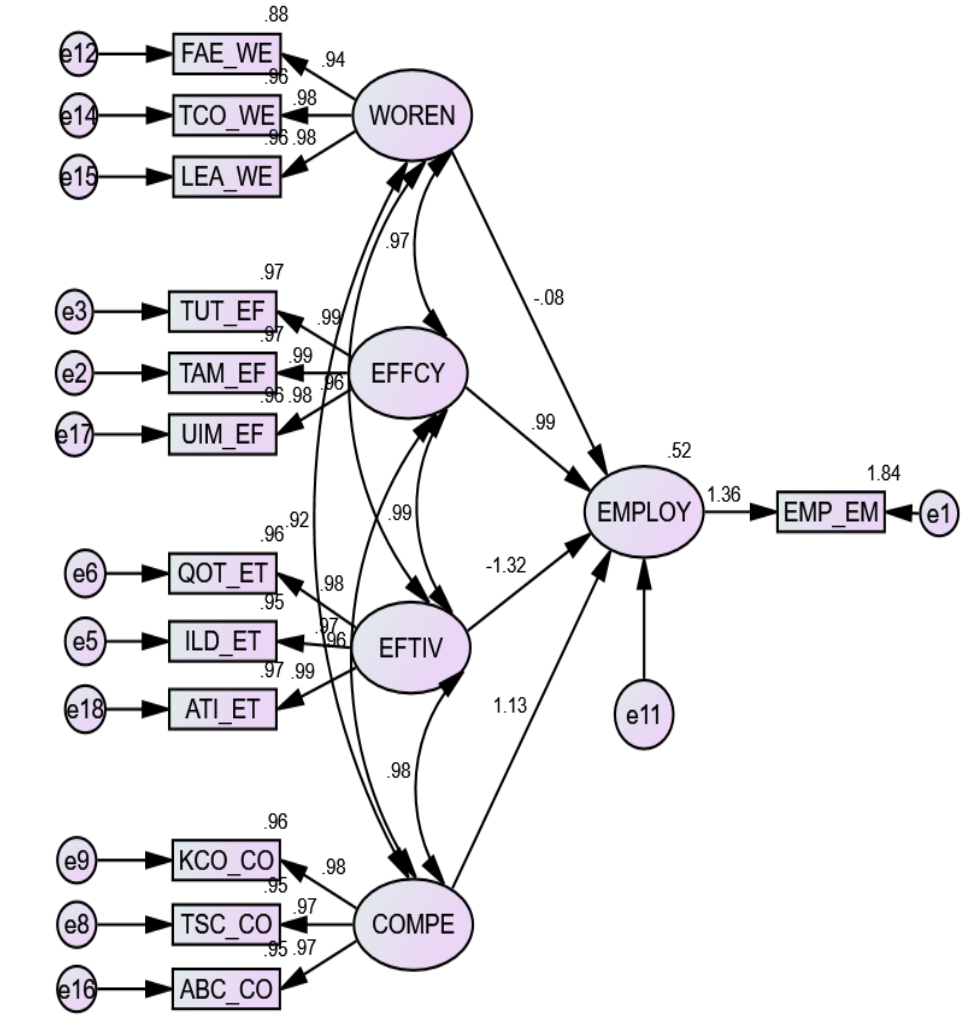
OBJECTIVE

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	.145	.090		1.617	.107
	ABC_CO	.503	.047	.504	10.694	.000
	TSC_CO	.303	.042	.309	7.188	.000
	ATI_ET	.182	.047	.180	3.884	.000
	QOT_ET	-.234	.052	-.243	-4.485	.000
	TUT_EF	.213	.046	.223	4.678	.000
a. Dependent Variable: EMP_EM						

OBJECTIVE 8 (MODEL BUILD UP)

MODEL 1





Regression Weights: (Group number 1 - Default model)

			B	S.E.	C.R.	BETA	P
EMPLOY	<---	EFFCY	1.452			.990	
EMPLOY	<---	EFTIV	-1.955			-1.319	
EMPLOY	<---	COMPE	1.720			1.129	
EMPLOY	<---	WOREN	-.135			-.082	
EMP_EM	<---	EMPLOY	.922			1.356	
TAM_EF	<---	EFFCY	1.000			.986	
TUT_EF	<---	EFFCY	.995	.012	80.919	.986	***
ILD_ET	<---	EFTIV	1.000			.973	
QOT_ET	<---	EFTIV	1.004	.014	73.832	.982	***
TSC_CO	<---	COMPE	1.000			.973	
KCO_CO	<---	COMPE	1.013	.014	70.005	.982	***
FAE_WE	<---	WOREN	1.000			.940	
TCO_WE	<---	WOREN	1.070	.027	39.687	.982	***
LEA_WE	<---	WOREN	1.102	.031	35.485	.980	***
ABC_CO	<---	COMPE	.996	.017	59.073	.973	***
UIM_EF	<---	EFFCY	.996	.014	70.030	.978	***
ATI_ET	<---	EFTIV	.993	.014	71.435	.985	***

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	**P**	**CMIN/DF**
Default model	37	114.491	56	**.000**	**2.044**
Saturated model	91	.000	0		
Independence model	13	310.039	78	.000	3.975

RMR, GFI

Model	RMR	**GFI**	AGFI	PGFI
Default model	.023	**.758**	.606	.466
Saturated model	.000	1.000		
Independence model	.298	.343	.234	.294

Baseline Comparisons

Model	**NFI Delta1**	RFI rho1	IFI Delta2	**TLI rho2**	**CFI**
Default model	**.631**	.486	.770	**.649**	**.748**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.051**	.038	.065	.412
Independence model	.087	.077	.097	.000

Table for Goodness of fit indices standard value

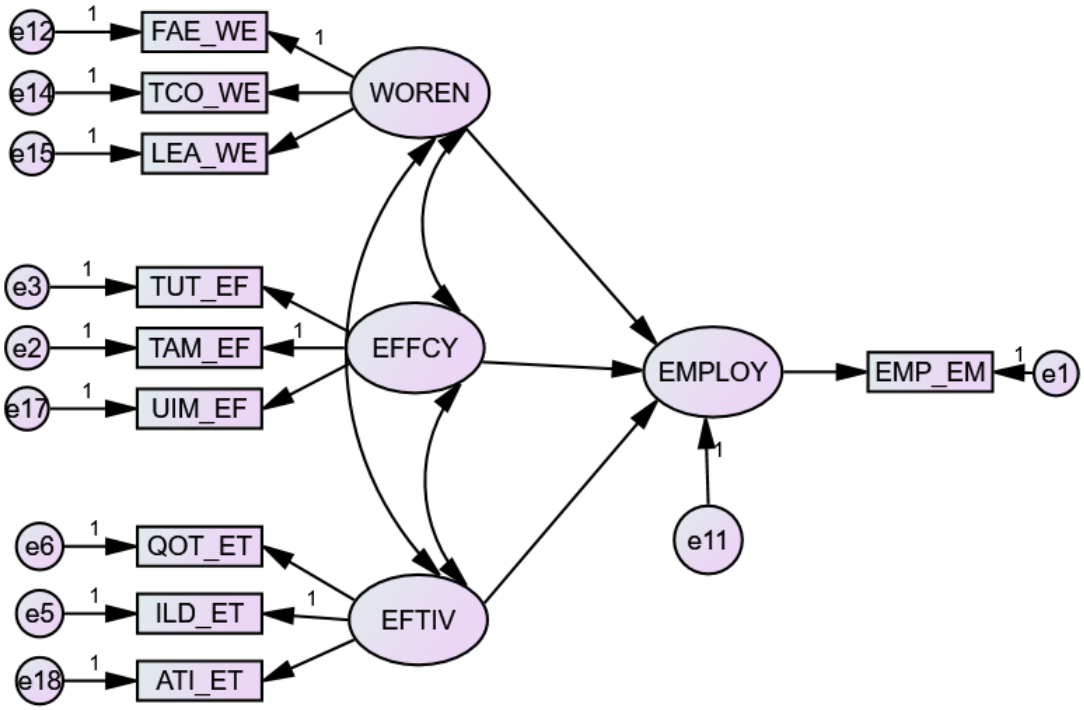
STANDARD INDICATORS	STANDARD VALUE	MODEL VALUE
CMIN/DF	< 2.00	**2.044**
p-value	> 0.05	**.000**
GFI	> 0.95	**.758**
NFI	> 0.95	**.631**
TLI	> 0.95	**.649**
CFI	> 0.95	**.748**
RMSEA	< 0.05	**.051**

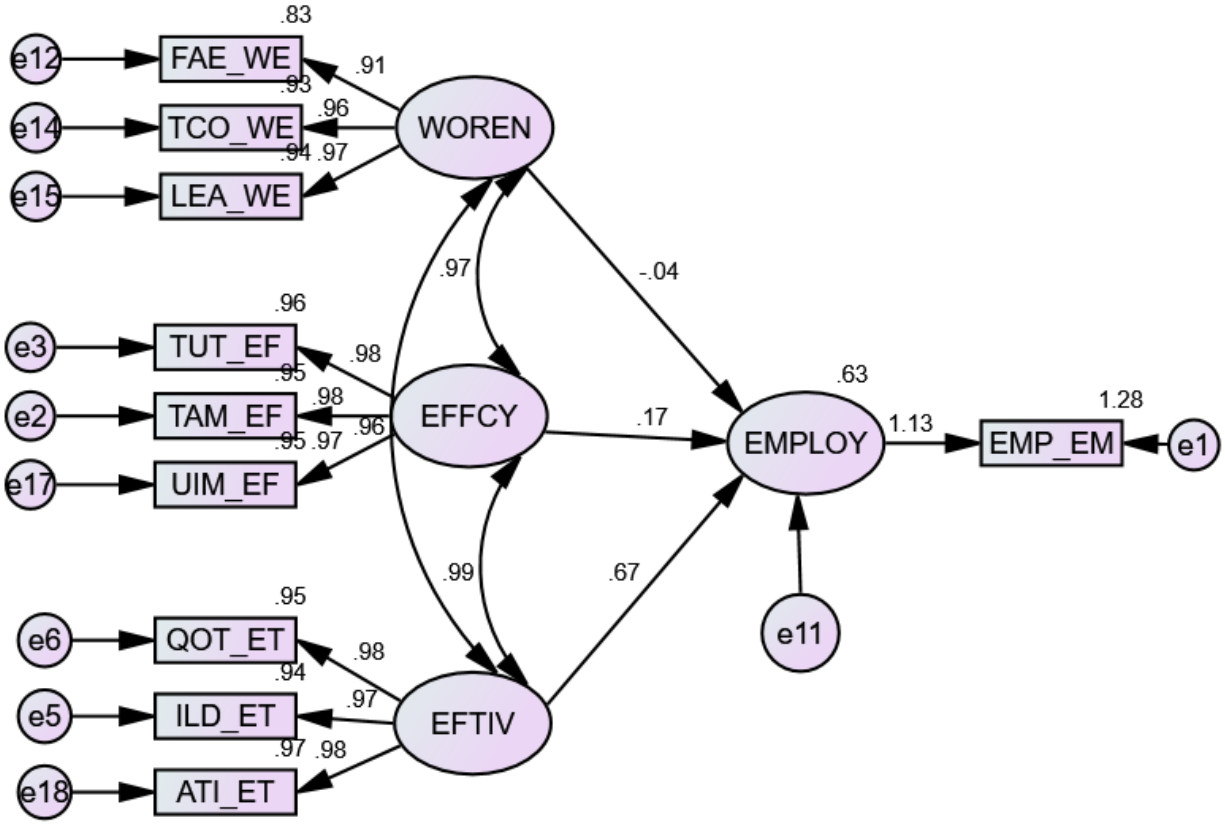
Compare the model values per found in the model to the standard value of the different fit indices.

BE SURE THAT ALL THE MODEL VALUES SATISFIES THE STANDARD VALUES.

(note: in the print out colored blue means not a good fit while colors in red satisfies the fit index.)

MODEL 2


e12
e14
e15
e3
e2
e17
e6
e5
e18
e11
e1
FAE_WE
TCO_WE
LEA_WE
TUT_EF
TAM_EF
UIM_EF
QOT_ET
ILD_ET
ATI_ET
WOREN
EFFCY
EFTIV
EMPLOY
EMP_EM
1


.83
.91
.93
.96
.94
.97
.97
-.04
.96
.98
.95
.98
.96
.95
.97
.63
1.28
1.13
.17
.99
.67
.95
.98
.94
.97
.97
.98
e12
e14
e15
e3
e2
e17
e6
e5
e18
e11
e1
FAE_WE
TCO_WE
LEA_WE
TUT_EF
TAM_EF
UIM_EF
QOT_ET
ILD_ET
ATI_ET
WOREN
EFFCY
EFTIV
EMPLOY
EMP_EM

Regression Weights: (Group number 1 - Default model)

			B	S.E.	C.R.	BETA	P
EMPLOY	<---	EFFCY	.499			.166	
EMPLOY	<---	EFTIV	2.007			.667	
EMPLOY	<---	WOREN	-.141			-.040	
EMP_EM	<---	EMPLOY	.383			1.132	
TAM_EF	<---	EFFCY	1.000			.976	
TUT_EF	<---	EFFCY	.987	.014	72.633	.979	***
ILD_ET	<---	EFTIV	1.000			.971	
QOT_ET	<---	EFTIV	.982	.017	56.240	.976	***
FAE_WE	<---	WOREN	1.000			.914	
TCO_WE	<---	WOREN	1.082	.032	33.606	.964	***
LEA_WE	<---	WOREN	1.122	.038	29.832	.971	***
UIM_EF	<---	EFFCY	.990	.017	57.081	.973	***
ATI_ET	<---	EFTIV	.982	.016	59.755	.985	***

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	**P**	**CMIN/DF**
Default model	27	68.983	30	**.000**	**2.299**
Saturated model	55	.000	0		
Independence model	10	214.047	45	.000	4.757

RMR, GFI

Model	RMR	**GFI**	AGFI	PGFI
Default model	.029	**.820**	.670	.447
Saturated model	.000	1.000		
Independence model	.309	.441	.317	.361

Baseline Comparisons

Model	**NFI Delta1**	RFI rho1	IFI Delta2	**TLI rho2**	**CFI**
Default model	**.678**	.517	.788	**.654**	**.769**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.057**	.040	.075	.231
Independence model	.098	.085	.111	.000

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Table for Goodness of fit indices standard value

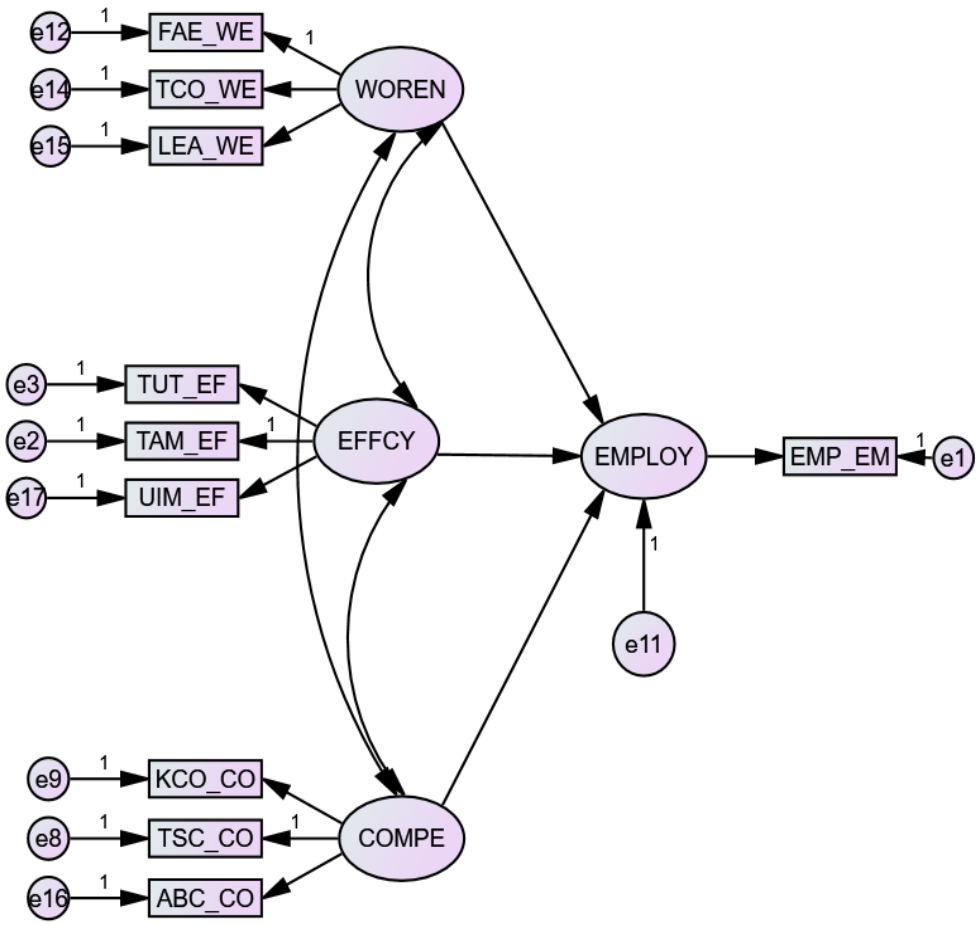
STANDARD INDICATORS	STANDARD VALUE	MODEL VALUE
CMIN/DF	< 2.00	
p-value	> 0.05	
GFI	> 0.95	
NFI	> 0.95	
TLI	> 0.95	
CFI	> 0.95	
RMSEA	< 0.05	

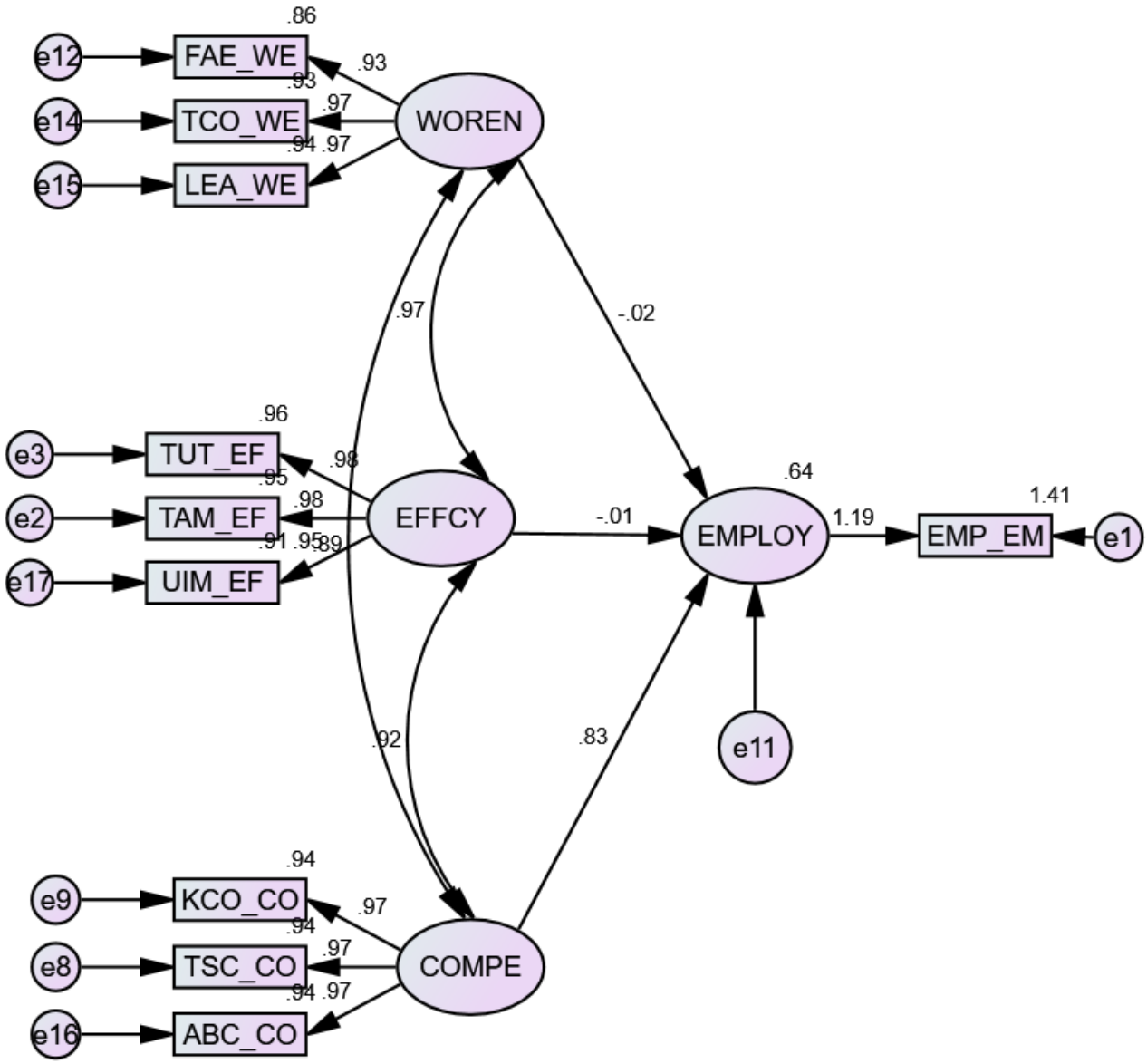
Compare the model values per found in the model to the standard value of the different fit indices.

BE SURE THAT ALL THE MODEL VALUES SATISFIES THE STANDARD VALUES.

(note: in the print out colored blue means not a good fit while colors in red satisfies the fit index.)

MODEL 3





Regression Weights: (Group number 1 - Default model)

			B	S.E.	C.R.	BETA	P
EMPLOY	<---	EFFCY	-.027			-.011	
EMPLOY	<---	COMPE	2.174			.830	
EMPLOY	<---	WOREN	-.061			-.023	
EMP_EM	<---	EMPLOY	.485			1.187	
TAM_EF	<---	EFFCY	1.000			.975	
TUT_EF	<---	EFFCY	.997	.013	74.465	.980	***
TSC_CO	<---	COMPE	1.000			.970	
KCO_CO	<---	COMPE	1.022	.016	62.887	.971	***
FAE_WE	<---	WOREN	1.000			.929	
TCO_WE	<---	WOREN	1.059	.028	38.364	.966	***
LEA_WE	<---	WOREN	1.097	.032	34.162	.972	***
ABC_CO	<---	COMPE	1.013	.021	48.350	.967	***
UIM_EF	-	EFFCY	.992	.016	62.932	.954	***

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	**P**	**CMIN/DF**
Default model	27	53.817	30	**.005**	**1.794**
Saturated model	55	.000	0		
Independence model	10	196.940	45	.000	4.376

RMR, GFI

Model	RMR	**GFI**	AGFI	PGFI
Default model	.017	**.847**	.719	.462
Saturated model	.000	1.000		
Independence model	.295	.440	.315	.360

Baseline Comparisons

Model	**NFI Delta1**	RFI rho1	IFI Delta2	**TLI rho2**	**CFI**
Default model	**.727**	.590	.857	**.765**	**.843**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.045	.025	.064	.648
Independence model	.092	.079	.106	.000

Table for Goodness of fit indices standard value

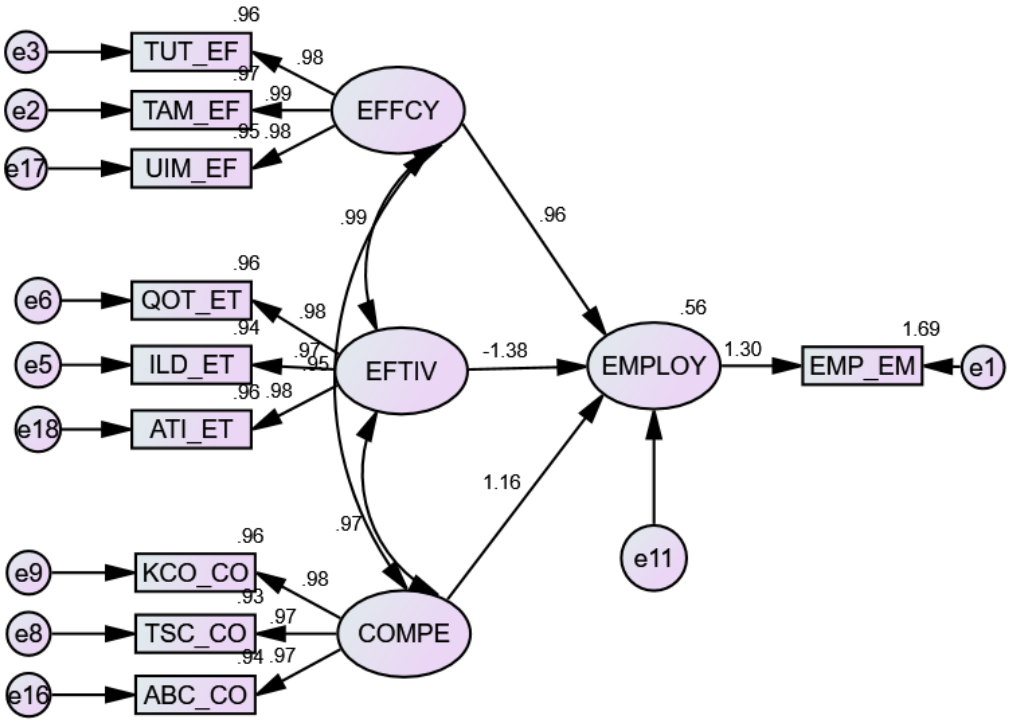
STANDARD INDICATORS	STANDARD VALUE	MODEL VALUE
CMIN/DF	< 2.00	
p-value	> 0.05	
GFI	> 0.95	
NFI	> 0.95	
TLI	> 0.95	
CFI	> 0.95	
RMSEA	< 0.05	

Compare the model values per found in the model to the standard value of the different fit indices.

BE SURE THAT ALL THE MODEL VALUES SATISFIES THE STANDARD VALUES.

(note: in the print out colored blue means not a good fit while colors in red satisfies the fit index.)

MODEL 4



Regression Weights: (Group number 1 - Default model)

			B	S.E.	C.R.	BETA	P
EMPLOY	<---	EFFCY	1.440			.957	
EMPLOY	<---	EFTIV	-2.083			-1.375	
EMPLOY	<---	COMPE	1.789			1.161	
EMP_EM	<---	EMPLOY	.876			1.300	
TAM_EF	<---	EFFCY	1.000			.987	
TUT_EF	<---	EFFCY	.983	.014	72.676	.979	***
ILD_ET	<---	EFTIV	1.000			.969	
QOT_ET	<---	EFTIV	.998	.015	64.733	.980	***
TSC_CO	<---	COMPE	1.000			.966	
KCO_CO	<---	COMPE	1.003	.015	64.933	.979	***
ABC_CO	<---	COMPE	.990	.019	52.477	.969	***
UIM_EF	<---	EFFCY	.998	.017	59.954	.976	***
ATI_ET	<---	EFTIV	.998	.016	60.995	.981	***

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	**P**	**CMIN/DF**
Default model	27	67.099	30	**.000**	**2.237**
Saturated model	55	.000	0		
Independence model	10	194.851	45	.000	4.330

RMR, GFI

Model	RMR	**GFI**	AGFI	PGFI
Default model	.025	**.809**	.650	.441
Saturated model	.000	1.000		
Independence model	.304	.446	.323	.365

Baseline Comparisons

Model	**NFI Delta1**	RFI rho1	IFI Delta2	**TLI rho2**	**CFI**
Default model	**.656**	.483	.775	**.629**	**.752**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.056**	.038	.074	.273
Independence model	.092	.079	.105	.000

Table for Goodness of fit indices standard value

STANDARD INDICATORS	STANDARD VALUE	MODEL VALUE
CMIN/DF	< 2.00	
p-value	> 0.05	
GFI	> 0.95	
NFI	> 0.95	
TLI	> 0.95	
CFI	> 0.95	
RMSEA	< 0.05	

Compare the model values per found in the model to the standard value of the different fit indices.

BE SURE THAT ALL THE MODEL VALUES SATISFIES THE STANDARD VALUES.

(note: in the print out colored blue means not a good fit while colors in red satisfies the fit index.)

MODEL 5 (ONE OF THE BEST MODEL)

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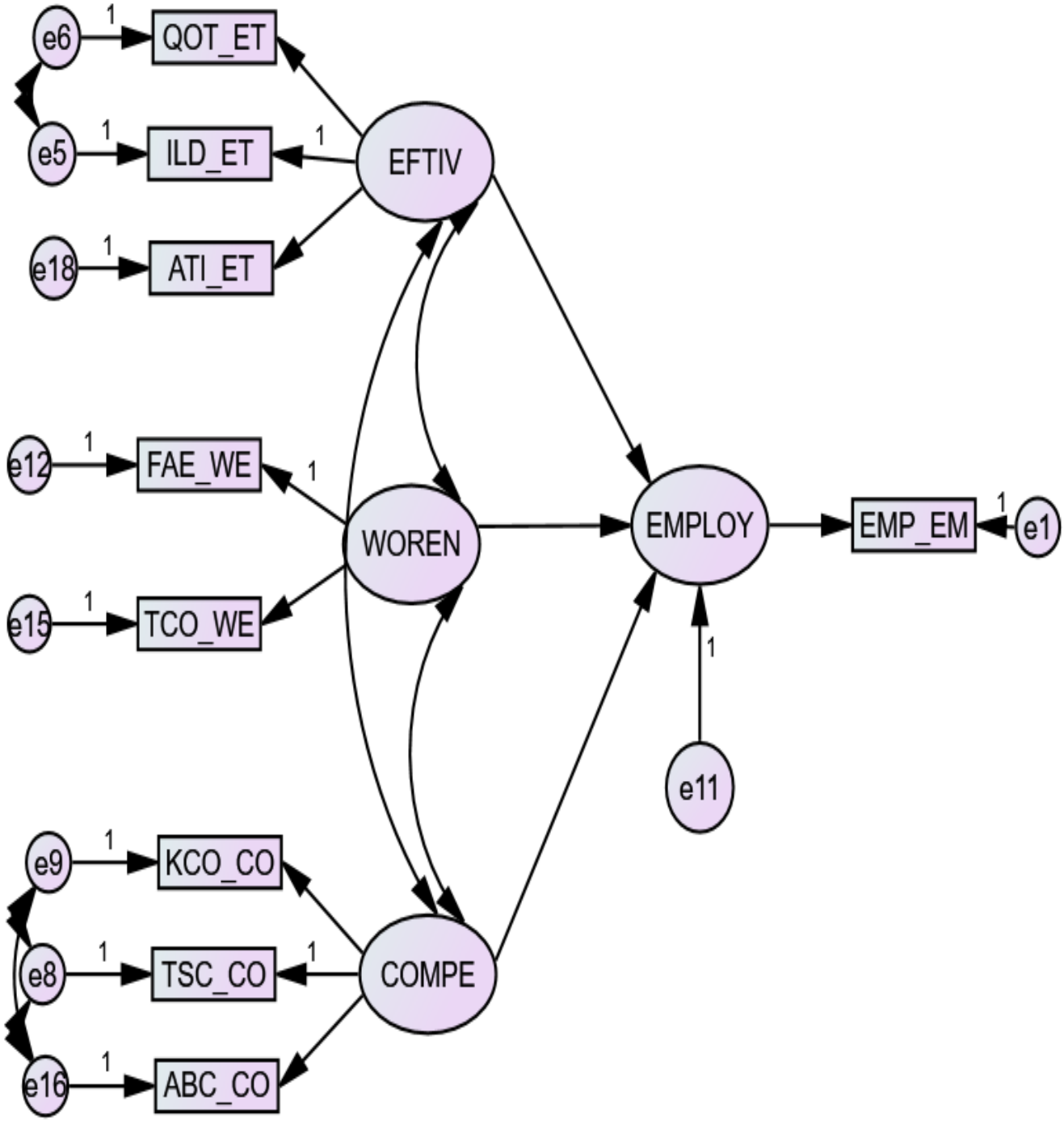

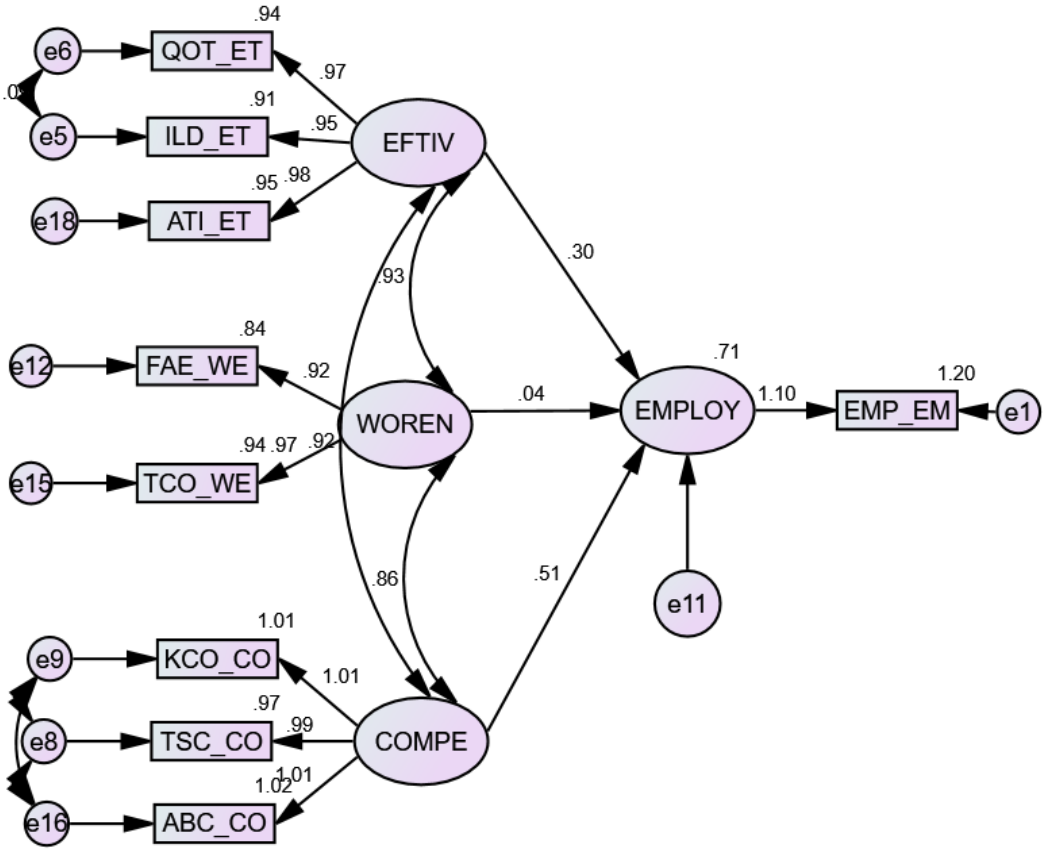

Regression Weights: (Group number 1 - Default model)

			B	S.E.	C.R.	BETA	P
EMPLOY	<---	WOREN	.132			.043	
EMPLOY	<---	EFTIV	.836			.302	
EMPLOY	<---	COMPE	1.401			.514	
EMP_EM	<---	EMPLOY	.407			1.096	
ILD_ET	<---	EFTIV	1.000			.952	
QOT_ET	<---	EFTIV	1.012	.017	59.993	.969	***
TSC_CO	<---	COMPE	1.000			.986	
KCO_CO	<---	COMPE	1.013	.016	63.146	1.006	***
FAE_WE	<---	WOREN	1.000			.916	
TCO_WE	<---	WOREN	1.077	.030	35.385	.971	***
ABC_CO	<---	COMPE	1.010	.019	52.307	1.010	***
ATI_ET	<---	EFTIV	1.006	.018	54.642	.977	***

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	**P**	**CMIN/DF**
Default model	29	28.042	19	**.083**	**1.476**
Saturated model	45	.000	0		

Model	NPAR	CMIN	DF	**P**	**CMIN/DF**
Independence model	9	198.445	36	.000	5.512

RMR, GFI

Model	RMR	**GFI**	AGFI	PGFI
Default model	.016	**.958**	.803	.387
Saturated model	.000	1.000		
Independence model	.288	.412	.265	.330

Baseline Comparisons

Model	**NFI Delta1**	RFI rho1	IFI Delta2	**TLI rho2**	**CFI**
Default model	**.975**	.953	.979	**.960**	**.979**
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

RMSEA

Model	**RMSEA**	LO 90	HI 90	PCLOSE
Default model	**.035**	.000	.060	.818
Independence model	.107	.093	.122	.000

Table for Goodness of fit indices standard value

STANDARD INDICATORS	STANDARD VALUE	MODEL VALUE
CMIN/DF	< 2.00	**1.476**
p-value	> 0.05	**.083**
GFI	> 0.95	**.958**
NFI	> 0.95	**.975**
TLI	> 0.95	**.960**
CFI	> 0.95	**.979**
RMSEA	< 0.05	**.035**

Compare the model values per found in the model to the standard value of the different fit indices.

BE SURE THAT ALL THE MODEL VALUES SATISFIES THE STANDARD VALUES.

(note: in the print out colored blue means not a good fit while colors in red satisfies the fit index.)

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HOW TO DETERMINE BEST FITTING STRUCTURAL MODEL

Table for Goodness of fit indices standard value

STANDARD INDICATORS	STANDARD VALUE	MODEL VALUE
CMIN/DF	< 2.00	
p-value	> 0.05	
GFI	> 0.95	
NFI	> 0.95	
TLI	> 0.95	
CFI	> 0.95	
RMSEA	< 0.05	

Compare the model values per found in the model to the standard value of the different fit indices..

(note: in the print out colored blue means not a good fit while colors in red satisfies the fit index.)

APPENDIX E

CURRICULUM VITAE

Position: Assistant Professor 1
DHRT Program Head

TESDA Assessor:

- Trainers Methodology Level 1
- FBS NC II, Barista NC II
- Housekeeping NC II & III,
- Domestic Work NC II

PERSONAL INFORMATION

Birthdate:
December 13, 1980

Place of Birth :
Buenavista, Agusan del Norte

Sex :
Female

Height and Weight :
5'ft. 3"inches. - 61 kg.

Religion :
Seventh Day Adventist

Language Known :
English, Tagalog, Bisaya

Licensure/ Eligibilities

- PRC - Licensure Examination for Teacher - 76.20%
- CSC - Civil Service Commission Passer - 87.84 %
- TESDA TM Level 1
- TESDA FBS NC II & III
- Barista NC II
- Housekeeping NC II & III

CIRRUCULUM VITAÉ

MEL-ANN L. GERONA

Email: mlgerona@tesda.gov.ph/ Contact # 09175691579

Educational Background:

Post Graduate

2023 – 2026
DMLO Doctor in Management major in Leadership and Organization
Liceo de Cagayan University – Cagayan de Oro City

2014 – 2019
MAED Master of Arts in Educational Administration
Bukidnon State University BSU – Bukidnon

2010- 2012
MACE Master of Arts in Christian Education
Far East Advent School of Theology (FEAST) - Manila

Tertiary

1997 – 2002
BSHRM Bachelor of Science in Hotel and Restaurant Management- 2002
BSED Bachelor in Secondary Education 2004-206
Saint Joseph Institute of Technology – Butuan City

Company:

TESDA - Technical Education and Skills Development Authority - Caraga

Northern Mindanao School of Fisheries

TESDA Awards:

- 2019-2026 Expert /Coach Philippine National Skills Competition
- Technical Expert since 2012-2026
- TTSA Awardee 2022
- Tagsanay Awardee Regional Level 2017 & 2021
- Outstanding Assessor 2012 & 2016

Skills/ Hobbies

- Computer Literate,
- Driving, Singing, Dancing
- Playing Piano, Playing Ball Games