

**The Role of Technology Integration in Hospitality Management Education on the Employability of Hospitality Management Graduates of a Private Autonomous University in Quezon City**

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**Abstract**

As the hospitality industry experiences rapid digital transformation, higher education institutions must align their curricula with contemporary industry standards. This study investigates the impact of technology integration in Hospitality Management (HM) education on the employability outcomes of 221 graduates from an autonomous private university in Quezon City for Academic Year 2024–2025. Utilizing a quantitative descriptive-correlational and descriptive-comparative design, data were gathered via an expert-validated researcher-made instrument (Cronbach's Alpha = 0.961). The data satisfied assumptions for parametric testing via Kolmogorov-Smirnov and Shapiro-Wilk evaluations. Findings reveal that while online communication and customer service technologies scored exceptionally high (GWM = 3.32, 'Strongly Agree'), technical proficiency in critical operational tools such as Property Management Systems (PMS) and Point-of-Sale (POS) software remain at basic competency thresholds (GWM = 3.07 and 2.98, respectively). Integrated On-the-Job Training (OJT) emerged as the most beneficial module (GWM = 3.12) compared to laboratory simulations. Inferential analysis demonstrates significant differences in perceived tech competencies and employability outcomes based on age, sex, employment status, and job position ( $p < 0.05$ ). Conversely, training adequacy and system accessibility were flagged as critical barriers. The study recommends institutional procurement of modern software licenses (e.g., Opera, Micros) and curriculum redesign focusing on strategic data analytics and artificial intelligence integration to foster global graduate competitiveness.

**Keywords:** technology integration, hospitality education, graduate employability, property management systems, point-of-sale software, digital transformation

**1. Introduction**

The global hospitality and management sector is experiencing a massive operational shift driven by accelerated digitalization, the deployment of industry-specific enterprise platforms, and artificial intelligence interfaces. These advanced architectures form the backbone of contemporary hotel administration, channel distribution, client relationship paradigms, and real-

time operational logistics (Buhalis & Leung, 2018; Liu et al., 2024). Consequently, current corporate entities demand that entry-level hospitality graduates arrive equipped with an optimized blend of traditional service attributes and practical proficiency in industry-standard technologies. Higher Education Institutions (HEIs) are responding by structuring integrated frameworks featuring blended learning, operational simulation platforms, and Work-Integrated Learning (WIL) modules (Nomnga, 2024; Yusof et al., 2025).

Within the domestic context of the Philippines, colleges and universities strive to bridge structural skill shortages through strategic linkages and technology-enhanced laboratory setups. Despite these pathways, a glaring mismatch between academic skill development and workplace technical demands continues to affect industry candidates (Stylianou & Pericleous, 2025). While young graduates demonstrate fluent general digital competencies in social networking, basic document editing, and online conferencing, they frequently experience structural barriers when navigating specialized enterprise solutions such as Property Management Systems (PMS) and complex Point-of-Sale (POS) configurations deployed in modern hotel and dining environments (Galon, 2024). This study isolates and investigates these dependencies inside a prominent Private Autonomous University (PAU) operating in Quezon City, providing key empirical tracking on curricular efficacy, technology-aided problem-solving capabilities, and graduate employability outcomes.

### *1.1 Statement of the Problem*

This study investigated the specific role, impact, and correlation of technology integration in the hospitality management curriculum on the subsequent employability and job readiness of graduates from an autonomous private university in Quezon City. It specifically sought to answer the following descriptive and inferential parameters:

1. What is the demographic and professional distribution of the respondents when evaluated by age, sex, civil status, current employment status, and job position?
2. How do graduates assess their specific technical competencies regarding Property Management Systems (PMS), Point-of-Sale (POS) systems, digital marketing platforms, communication technologies, and emerging AI tools?
3. What is the perceived level of curriculum integration across dedicated technology subjects, lab simulations, and integrated OJT exposure?
4. What specific challenges do graduates face when applying learned technical competencies inside their respective workplaces?

*1.2 Hypotheses of the Study*

To validate the variables empirically, the following structural null hypotheses were formulated and tested at an alpha threshold of 0.05:

H01: There is no significant difference in the graduates' self-assessment of technical competencies when segregated by demographic profiles.

H02: There is no significant difference in the perceived relevance of integrated curriculum training when grouped by demographic profiles.

H03: There is no significant relationship between a graduate's technological competency and their workplace employability metrics.

**2. Methodology**

The study deployed a comprehensive quantitative descriptive-correlational, comparative, and evaluative design. This methodological arrangement allowed the researcher to map basic profile metrics, establish comparative differences across diverse student cohorts, and determine the structural relationship connecting the core constructs: technological competence (independent variable) and graduate employability (dependent variable).

*2.1 Research Locale, Population, and Sampling*

The data collection was anchored at a premier private autonomous university in Quezon City, Philippines, an institution whose hospitality program holds prestigious distinction as a Center of Excellence (COE) from the Commission on Higher Education (CHED). The research applied a total enumeration technique to eliminate sampling bias. The target population comprised the entire cohort of 221 Hospitality Management graduates from Academic Year 2024–2025 across distinct specializations. Complete responses were obtained from all 221 subjects, achieving a 100% participation index. The distribution across specific academic pathways is illustrated below in Table 1.

<b>Academic Pathway / Specialization</b>	<b>Target Population (N)</b>	<b>Actual Respondents (n)</b>
BSCA (Culinary Arts)	78	78
BSHACLO (Hotel Administration in Cruiseline Operations)	125	125
BSREFCO (Restaurant and Fast Food Chain Operations)	18	18
Total Enumerated Sample Cohort	221	221

### *2.2 Instrumentation, Validity, and Reliability*

The primary data-gathering tool consisted of a highly structured, researcher-made four-point Likert scale questionnaire. The instrument was divided into three core sections: Demographic and Workplace Profile, Perceived Technical Competency, and Employability Metrics. To ensure content validity, the tool was evaluated, refined, and validated by a panel of three leading hospitality management experts, including the Program Head and Student Work Experience Program (SWEP) Coordinator. To guarantee internal consistency, a rigorous pilot test was administered to 30 hospitality graduates from the 2023 baseline batch (isolated from the actual test pool). The calculation produced a Cronbach's Alpha coefficient of 0.961 across the 75 core items, demonstrating high reliability and scale stability well above the acceptable 0.70 threshold.

### *2.3 Preliminary Data Screening and Normality Testing*

Before executing inferential statistical models, the raw data underwent objective testing for distribution normality to prevent Type I or Type II errors. Utilizing the Kolmogorov-Smirnov and Shapiro-Wilk statistical tests, individual subset matrices were cross-checked. For the core composite scale tracking sustainable educational parameters, the Shapiro-Wilk evaluation yielded a strong significance value ( $p > 0.05$ ), failing to reject the null hypothesis of normality. While minor localized skewness was detected in specific human resource sub-indicators, the application of the Lilliefors Significance Correction and the robust sample size ( $n=221$ ) safely validated the structural requirements needed to proceed with parametric testing, including independent t-tests, One-Way Analysis of Variance (ANOVA), and Pearson Product-Moment Correlation.

## **3. Results and Discussion**

### *3.1 Respondent Demographic and Occupational Profiles*

Descriptive analysis of the demographic data reveals a youthful, entry-level distribution. The largest age cluster falls within the 22–23 years old category, accounting for 103 individuals (46.6%), signaling a demographic transitioning into the active corporate arena. In terms of sex distribution, female graduates represent the dominant segment at 61.1% (135 respondents), while males comprise 38.9% (86 respondents). An overwhelming majority of 98.6% maintain a civil status of single. Occupational tracking indicates that 41.2% are currently transitioning into positions (unemployed), 39.4% hold full-time positions, and 16.7% work part-time. Critically, 81.0% of gainfully employed graduates occupy rank-and-file operational roles, underscoring that their technical feedback directly mirrors actual, hands-on workplace implementation.

*3.2 Perceived Levels of Technological Competency*

The evaluation of graduates' self-assessed digital proficiencies across distinct technical domains indicates variable levels of comfort. Table 2 outlines the grand weighted means and corresponding verbal interpretations for the primary technical indicators.

<b>Technical Indicators</b>	<b>Domain</b>	<b>Grand Weighted Mean</b>	<b>Verbal Interpretation</b>
Property Systems & Reservations	Management (PMS) &	3.07	Agree (Competent)
Point-of-Sale & Financial Transactions	(POS) &	2.98	Agree (Competent)
Digital Marketing & Social Media Platforms	& Social	3.11	Agree (Competent)
Customer Service & Online Communication Tech	& Online	3.32	Strongly Agree (Highly Competent)
Emerging Technologies (AI, Automation, Analytics)	(AI, Automation, Analytics)	3.17	Agree (Competent)

While the scores are generally positive, a granular review reveals important structural gaps. Under the Property Management System framework, respondents express clear comfort when performing guided, routine procedures such as managing guest reservations (WM = 3.20); yet, confidence drops sharply when asked to operate the system independently without corporate supervision (WM = 2.84). A similar trend occurs inside POS operations, where processing client payments yields a score of 3.10, but autonomous operational mastery scores lowest at 2.89. Conversely, customer service communication applications (e.g., chat support, professional emailing) achieved the highest rating (GWM = 3.32, 'Strongly Agree'), highlighting strong fluency in interactive, customer-facing digital software.

*3.3 Curricular Training Assessment and Challenges*

Graduates perceive the integration of digital preparation in the curriculum as moderately effective. Integrated OJT exposure scored the highest weighted mean (GWM = 3.12), driven by valuable supervisor feedback on technical execution (WM = 3.26). Dedicated technology subjects registered a mean of 3.09, while school-based laboratory simulations scored the lowest at 2.99. This lower baseline points to an institutional deficit regarding hands-on exposure to vendor-standard packages (e.g., Opera, Fidelio, Micros) within university facilities. This directly links with the ranking of workplace challenges encountered by graduates, as structured below in Table 3.

<b>Perceived Challenges</b>	<b>Workplace</b>	<b>Weighted Mean</b>	<b>Ordinal Ranking</b>
Training (Insufficient practical/experiential exposure)	Adequacy	3.64	Rank 1
Curriculum (Alignment with current industry software)	Relevance	3.57	Rank 2
System Accessibility (Lack of direct access to advanced systems)		3.17	Rank 3

*3.4 Inferential Analysis and Hypothesis Testing*

To address the study's core comparative and correlational questions, multiple F-tests (ANOVA) were executed to determine whether technical perceptions vary based on profile characteristics. The statistical results for these differences are consolidated in Table 4.

<b>Profile Cluster</b>	<b>Variable</b>	<b>Perceived Competency (p-value)</b>	<b>Integrated Curriculum (p-value)</b>	<b>Employability Impact (p-value)</b>
Age Grouping		0.000 (Significant)	0.000 (Significant)	0.000 (Significant)
Sex / Gender		0.000 (Significant)	0.000 (Significant)	0.000 (Significant)
Civil Status		1.000 (Not Significant)	0.000 (Significant)	0.159 (Not Significant)
Employment Status		0.000 (Significant)	0.000 (Significant)	0.000 (Significant)
Job Position Level		0.000 (Significant)	0.001 (Significant)	0.028 (Significant)

The data requires rejecting the null hypotheses for age, sex, employment status, and job position across nearly all core dimensions ( $p < 0.05$ ). This confirms that a graduate's professional role, age maturity, and active corporate exposure heavily differentiate their self-assessed technological competency and career readiness. Younger, tech-native individuals perceive technology as an intuitive operational baseline, whereas those holding progressive supervisory responsibilities isolate it as a strategic tool. Crucially, the Pearson correlation test rejected the final null hypothesis, establishing a statistically significant positive relationship between technological competency and graduate employability outcomes ( $p < 0.05$ ), reinforcing Human Capital and Constructivist learning theories.

## **4. Conclusion and Recommendations**

### *4.1 Conclusion*

This research confirms that technology integration within hospitality management education acts as a vital driver of graduate employability. While the university's curriculum successfully builds strong communication and basic digital literacy, a clear gap persists in relation to autonomous command of specialized, industry-standard enterprise solutions (PMS, POS, data analytics). The study concludes that simply embedding technology conceptually in syllabi is insufficient; instead, genuine employment readiness depends on active, unassisted hands-on mastery. The high ranking of training adequacy as a primary challenge, coupled with the low scores for school laboratory software exposure, highlights an urgent need to shift from passive classroom instruction to interactive, simulation-driven experiential education.

### *4.2 Recommendations*

Based on the empirical findings, the following targeted interventions are recommended for academic administrators and industry stakeholders:

1. For Academic Institutions: Immediately update hospitality laboratories by acquiring active user licenses for global industry-standard software such as Opera PMS and Micros POS. The curriculum committee should embed dedicated microcredentials and mandatory software certification paths directly into professional courses starting in Academic Year 2026–2027.
2. For Faculty Members: Transition from theoretical discussions to intensive, case-based simulation drills. Introduce mandatory unassisted practical examinations for front-office, inventory, and cost-control modules to build graduate confidence and operational autonomy.
3. For Industry Partners: Cooperate with the university to restructure internship agreements, ensuring that OJT students receive structured, cross-trained exposure to advanced back-end operational systems rather than being confined to routine manual tasks.
4. For Future Researchers: Expand the analytical framework by incorporating paired employer-side performance evaluations to compare self-assessed competence with objective corporate metrics. Longitudinal tracer tracking should also be initiated to measure the long-term impact of digital fluency on promotion velocities.

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