Digital Literacy Training for Hotel Housekeepers

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Abstract

As the hospitality industry increases the use of technology, digital literacy in frontline workers becomes imperative. This study examined the impacts of digital literacy training for hotel housekeeping trainees. Using PLS-SEM mediation analysis and t-tests, the study found that incorporating workplace technologies into structured training enhanced the comfort, confidence, perceived ease of use, perceived usefulness of workplace technology, and perceptions of job readiness among hotel housekeeping trainees.

Key Words: *Digital Literacy, Training, Hotel, Housekeeper, Technology Implementation*

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Introduction

For hospitality employees, technology is increasingly a part of their daily responsibilities (Carlisle et al., 2023). Employee performance often depends on their ability to use technology tools (Yaacob et al., 2023). Yet, many entry-level hospitality employees have limited experience with digital technologies (Guo et al., 2023). This is compounded by limited training on the digital tools required in today's workplace, leaving many hospitality employees unprepared to meet the technological demands of their roles (Yaacob et al., 2023).

Increasing developments in AI promise personalization of the hotel guest experience (Talukder et al., 2024). Operationally, this will require hotel housekeepers to utilize technology to deliver on the guests' preferences. Yet, hotel housekeepers often lack the necessary digital skills to utilize workplace technologies effectively (Nasir et al., 2024).

This study aimed to evaluate the impact of digital literacy training on housekeeping trainees' comfort, confidence, perceived ease of use, perceived usefulness of workplace technology, and perception of job readiness.

Background/Literature Review

Key Components and Impact of Digital Literacy

Research identifies four key components of digital literacy relevant to the hospitality industry: comfort with technology, confidence in using digital tools, perceived ease of use (PEOU), and perceived usefulness (PU) (Venkatesh et al., 2012). Comfort with technology refers to an employee's willingness to engage with new digital tools, while confidence signifies their ability to navigate digital platforms effectively. Perceived ease of use relates to how simple it is to integrate technology into their tasks, and perceived usefulness reflects the extent to which they believe technology enhances their job performance (Venkatesh et al., 2003).

Higher levels of digital literacy correlate with increased perceptions of ease of use and usefulness, facilitating smoother technology integration in hospitality settings (Sunny et al., 2019). Enhanced digital literacy positively impacts job readiness and performance among hospitality employees (Chaudhuri et al., 2023).

Perceived Usefulness (PU) and Perceived Ease of Use are particularly relevant in the hospitality industry for understanding how employees adopt technologies (Cimbaljević et al., 2024; Davis, 1989; Guo et al., 2023; Kucukusta et al., 2015). When housekeeping staff perceive technology as useful and easy to use, they are more likely to integrate it into their workflows, resulting in improved efficiency and job satisfaction (Cimbaljević et al., 2024).

The relationship between digital literacy and perceived job readiness is well-documented in research. As employees become more comfortable and confident with technology, they are better prepared to integrate digital tools into their work processes(Chan et al., 2021).

Technology Readiness

Technology readiness complements digital literacy by addressing the psychological, behavioral, and attitudinal factors that influence the adoption of technology. Technology readiness can also shape perceptions of ease of use and usefulness (Davis, 1989; Walczuch et al., 2007). Understanding these dimensions is essential for developing training programs that address technical skills and employees' attitudes and apprehensions, fostering a balanced approach to workforce development.

In the hospitality industry, technology readiness is critical in shaping how staff, such as housekeepers, perceive and engage with digital systems (Parasuraman, 2000; Walczuch et al., 2007). Targeted interventions, including hands-on training and continuous support, can reduce discomfort and insecurity, significantly improving adoption rates of workplace technologies (Cimbaljević et al., 2024; Mankins, 2009). Integrating technology readiness into digital literacy programs creates a workforce that is technically proficient and prepared to adopt advanced technologies (Cimbaljević et al., 2024; Parasuraman, 2000).

Technology Training

Effective technology training incorporates hands-on experience, ongoing technical support, and opportunities to experiment with new tools, which are essential for fostering confidence and improving usability (Klein et al., 2001). Technology training can reduce employee resistance to new systems (Marler et al., 2006).

The Gap in Literature

The integration of digital tools in hospitality operations has been widely studied in the context of front-office management, customer engagement, and business analytics (Ali et al., 2024; Li et al., 2021). Studies have emphasized the role of digital competencies in improving workplace productivity, enhancing service delivery, and streamlining operational processes (Lazić et al., 2023). However, much of this literature focuses on managerial staff, IT specialists, and customer-facing roles, with little attention given to the impact of digital skills on employees who work behind the scenes. This lack of focus on housekeeping staff has resulted in a knowledge gap regarding how digital literacy training can enhance their job readiness, efficiency, and adaptability in a technology-driven industry (Bejaković & Mrnjavac, 2020).

This study addresses this gap by investigating the relationship between digital literacy training and housekeeping staff's perceived job readiness. By assessing how digital competencies influence their ability to integrate digital tools into their daily responsibilities, this research provides valuable insights into the role of digital literacy in optimizing hospitality operations (Sun et al., 2022; Venkatesh et al., 2003). Furthermore, it contributes to theoretical discussions by extending digital literacy frameworks to include operational roles within the hospitality sector (Eshet-Alkalai, 2004; Ng, 2012).

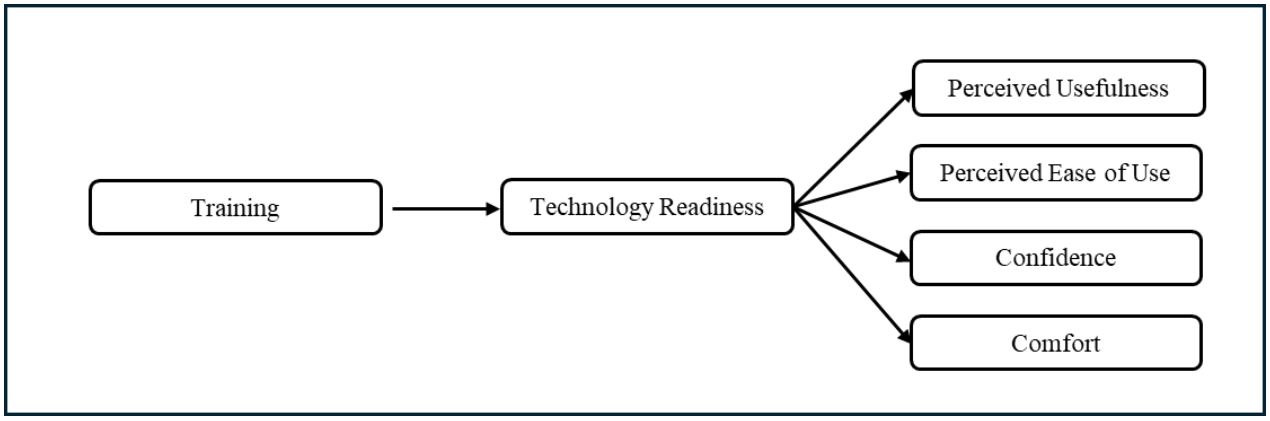
Despite the importance of training, a gap also exists in the literature regarding targeted technology training for hotel employees, particularly housekeepers. Most studies focus on general training, overlooking the unique challenges faced by operational staff. Addressing this gap by implementing structured and targeted training programs is essential for optimizing individual and organizational performance.

From a practical perspective, the findings of this study offer critical insights for policymakers, educators, and industry leaders on developing targeted workforce training programs. Understanding the digital literacy needs of housekeeping staff can inform the design of training interventions that equip them with the necessary skills to navigate digital platforms effectively, enhance their efficiency, and improve overall service quality (Mohd Abas et al., 2019).

Conceptual Framework

The study commenced with examining the impact of targeted digital training on Technology Readiness [H1], Perceived Ease of Use [H2], Perceived Usefulness [H3], Confidence [H4], and Comfort with Technology [H5]. We then examined how Technology Readiness mediates the relationship between Digital Literacy Training and Perceived Ease of Use, Perceived Usefulness, Confidence, and Comfort with Technology (See Figure 1).

Figure 1: Model for Mediation Effect of Technology Readiness on Perceived Ease of Use, Perceived Usefulness, Confidence, and Comfort with Technology



Methodology

This study used a quantitative method design, consisting of a structured online survey administered to housekeeping trainees at a hospitality employee training center in the Southwest U.S. The study included 164 participants, with 79 participant responses paired with pre- and post-training surveys. The study employed a modified version of the TRI, TAM, and UTAUT as its tool to align with the construct and in consideration of the low language levels of the population. Each construct consisted of five items formulated on a 5-point Likert scale ranging from "strongly agree" to "strongly disagree," and from "not at all confident."

The study involved a partnership between a hospitality training center, a major hospitality technology company, a labor organization, and researchers affiliated with universities. The study protocol included a pre-training survey, training on a housekeeping technology using digital devices, application of the training through practice during housekeeping room cleaning, and a post-training survey.

Considering that the sample size for this study is moderately small (Astrachan et al., 2014) and it was primarily exploratory (Hair et al., 2012). The Partial Least Squares Structural Equation Modeling (PLS-SEM) estimation method was first employed to evaluate the proposed hypotheses among the targeted constructs (Astrachan et al., 2014). To determine the mediating effect, the results show the strength of each indirect effect (β), the precision of estimates (BootSE), and their statistical significance based on whether the 95% BCa confidence intervals exclude zero. This analysis employs the non-parametric bootstrapping technique with bias-corrected and accelerated (BCa) intervals (Iacobucci et al., 2007; Ong & Puteh, 2017). This comprehensive analytical approach guaranteed the reliability and validity of the findings, offering a thorough evaluation of the training intervention's effects and the interactions among critical variables.

Results

The analysis using PLS-SEM indicated that all independent variables explained a sizable portion of the variance in their respective dependent variables. Specifically, training explained around 20.9% ($R^2 = 0.209$) of the variance in TR. Similarly, TR explained 42.6% ($R^2 = 0.426$) of the variance in PEU, 30.4% ($R^2 = 0.304$) in PU, 29.3% ($R^2 = 0.293$) in Confident, and 32.8% ($R^2 = 0.328$) in Comfort.

Table 1: Direct Effects

Direct Path	Estimate (β)	Std. Error	*z*-value	*p*-value	Significance
Training→TR	0.471	0.118	4.003	0.000	Yes
TR→PEU	0.211	0.063	3.365	0.001	Yes
TR→PU	0.151	0.061	2.455	0.014	Yes
TR→Confidence	0.190	0.067	2.824	0.005	Yes
TR→Comfort	0.636	0.066	9.661	<0.001	Yes

Note: PU=Perceived Usefulness; PEU=Perceived Ease of Use; TR=Technology Readiness; β=Standardized Path Coefficient. Estimates based on 5000 bootstrap samples using BCa (Bias-Corrected and Accelerated) confidence intervals.

Table 2: Indirect Effects (Mediation Paths)

Indirect Path	β (ACME)	95% CI	*p*-value	Significance
Training→TR→PEU	0.099	[0.0276, 0.16]	0.008	Yes
Training→TR→PU	0.071	[-0.0055, 0.13]	0.044	Yes
Training→TR→Confidence	0.089	[0.0154, 0.15]	0.017	Yes
Training→TR→Comfort	0.300	[0.1389, 0.45]	<0.001	Yes

Note: β (ACME) = Average Causal Mediation Effect, CI = Confidence Interval; [a]The bootstrap samples were 5000.

The results indicate that Technology Readiness significantly mediated the effects of Training on Perceived Ease of Use, Confidence, and Comfort. The mediation effect for PU was marginal.

Table 3: Mediation Analysis

Mediated Path	ACME	95% CI	*p*-value	Significance
Training→TR→PEU	0.0876	[0.0276, 0.16]	0.0032	Yes
Training→TR→PU	0.0538	[-0.0055, 0.13]	0.0704	Marginal
Training→TR→Confidence	0.0787	[0.0154, 0.15]	0.016	Yes
Training→TR→Comfort	0.2873	[0.1389, 0.45]	<.001	Yes

T-Tests

The results of independent sample *t*-tests indicate that training resulted in significant improvements in Technology Readiness, Perceived Ease of Use, Perceived Usefulness, and Comfort. While Confidence improved, the result was not statistically significant.

Table 4: Independent Sample *t*-Test Results

Variable	Pre (M±SD)	Post (M±SD)	*t*	*p*-value	Significance
TR2	2.90 ± 0.57	2.97 ± 0.48	-1.11	0.269	No
PEU	3.91 ± 0.86	4.20 ± 0.66	-3.03	0.003	Yes
PU	3.95 ± 0.94	4.25 ± 0.77	-2.79	0.006	Yes
Confidence	3.90 ± 0.85	4.23 ± 0.75	-3.35	0.001	Yes
Comfort	2.45 ± 0.88	2.08 ± 0.83	-3.40	0.001	Yes

Implications

The findings reinforce the interconnected nature of training, technology readiness, and perceived job readiness in the hospitality industry. Employees with higher technology readiness not only find digital tools easier to use but also perceive them as more beneficial to their work responsibilities (Lin et al., 2007).

The results demonstrate that employees who receive training experience increased confidence and comfort in using technology, reducing resistance to digital transformation in hospitality operations. This finding supports previous research indicating that training interventions influence digital competency (Kim et al., 2021).

The broader implications of these findings underscore the need for ongoing training in digital literacy. As the hospitality industry advances toward automation, artificial intelligence (AI), and the integration of smart technology, employees must be equipped with the skills necessary to navigate evolving digital landscapes (M'hamed et al., 2024).

One of the key implications is that investment in comprehensive digital literacy training programs is essential for improving employees' ability and willingness to adopt technological tools. The results demonstrate that employees who receive structured training develop greater confidence and comfort and perceive digital tools as easier to use, which enhances overall productivity and operational efficiency.

Limitations and Future Research

This study was conducted at a hospitality training center located in a single geographic area and focused on housekeeping trainees. It is recommended that future studies be expanded to other training centers and positions, as well as to hospitality businesses. The study focused on a quantitative analysis, which, while providing statistically significant insights, does not capture the rich, lived experiences of employees undergoing digital literacy training. Future research should incorporate qualitative methodologies such as in-depth interviews, focus groups, and case studies to provide a deeper understanding of employees' perspectives, challenges, and motivations regarding digital training programs.

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