International Journal of Education Management and Religion
Volume 3 No 2 July 2026
E-ISSN: 3090-3145
https://journal.as-salafiyah.id/index.php/ijemr/index
editoriemr@gmail.com

Smart Hospitality: Key Drivers Of Digital Technology Usage Of Hotels In Cauayan City, Isabela, Philippines

[1]Rojohn Mark P. Ramiscal, [2]Mark Joseph Martinez, [3]Jayson Pallaya, [4]Rafael Villasana, [5]Albert S. Alejandro, [6]Client William M. Malinao
[1,2,3,4,5,6]College of Business and Management, Ifugao State University, Philippines.
[1]rojohn.ramiscal@ifsu.edu.ph, [2]mark.martinez@ifsu.edu.ph,
[3]jayson.pallaya@ifsu.edu.ph, [4]rafael.villasana@ifsu.edu.ph,
[5]albert.alejandro@ifsu.edu.ph, [6]clientwilliammalinao@gmail.com

**Correspondence e-mail: clientwilliammalinao@gmail.com*

Abstract: *In an era where digital innovation reshapes the hospitality industry, hotels' ability to adopt and integrate smart technologies has become a critical determinant of competitiveness and service excellence. Thus, this study investigated the key factors influencing digital technology adoption among hotels in Cauayan City, Isabela, Philippines- an emerging tourism hub. Specifically, it aimed to (1) identify drivers affecting digital technology usage, (2) determine the level of usage of digital technologies, and (3) examine the relationships between these factors and actual technology usage. A descriptive–correlational design was employed, collecting data from 135 hotel managers and staff via a validated and reliable survey instrument (Cronbach's α = 0.91). Using frequency and percentage distribution, weighted means, Pearson-r correlation, findings revealed that financial resources availability (M = 3.92) emerged as the most influential factor, followed by insights (M = 3.75), culture (M = 3.69), technology (M = 3.68), organization (M = 3.64), and government regulations (M = 3.54) as perceived by the respondents. Hotels demonstrated strong adoption of e-payments, smart room key systems, and mobile check-in/out, though no use of artificial intelligence, robotics and virtual reality highlighted opportunities for advanced digital integration. Correlation analysis confirmed moderate to strong positive relationships between determinants and technology usage, with organizational (r = 0.540, p = 0.001) and technological (r = 0.537, p = 0.001) factors as the strongest predictors. Cultural, insight, financial, and regulatory factors also showed significant associations. Findings suggest that hotels with strong leadership, adequate resources, technological readiness, and a culture of innovation are more likely to achieve sustainable digital transformation. The study extends the Technology–Organization–Environment and Technology Adoption Model framework to a local hospitality context and provides actionable insights for hotel managers and policymakers seeking to foster smart, data-driven, and competitive hotel operations.*
Keywords*: Digital Technology Adoption, Smart Hospitality, Hotel Management, Cauayan City, Isabela.*

INTRODUCTION

The Fourth Industrial Revolution is fundamentally transforming global tourism and hospitality operations through the integration of Artificial Intelligence (AI), the Internet of Things (IoT), and big data technologies. AI-driven applications such as chatbots, recommendation systems, predictive analytics, and robotic automation are reshaping how businesses interact with travelers and deliver personalized services, enabling dynamic pricing and efficient resource

management (Gayathri, 2025). Likewise, Industry 4.0 technologies, including IoT sensors, wireless communications, robotics, and real-time data analytics, have revolutionized business travel models by increasing processing capacity and interconnection (Mazilescu, 2019). Big data analytics are increasingly adopted by tourism scholars for data retrieval, collection, and visualization, further enhancing AI and IoT capabilities that rely heavily on data-driven insights (Mariani, 2019). The integration of digital platforms, combining AI, big data, blockchain, virtual reality (VR), and IoT, has begun to optimize travel experiences while influencing inclusivity and environmental sustainability, though issues related to data monopolization and regulatory challenges remain (Zeqiri et al., 2025).

Smart technologies are revolutionizing hotel operations worldwide by improving service quality, operational efficiency, and sustainability. Studies reveal that hotels implementing six or more smart technologies, primarily at customer touchpoints, achieve substantial advantages in personalization and process optimization (Çeltek, 2023). AI-powered services, IoT-enabled room automation, and mobile applications have transformed the guest experience and redefined operational standards (Çeltek, 2023; Дудник, 2024). Empirical findings confirm that AI and IoT integration enhances operational efficiency while reinforcing sustainable practices such as resource optimization and carbon reduction (Gajić et al., 2024). Energy-efficient lighting and heating systems, water-conserving fixtures, and waste management innovations are increasingly integrated into hotel sustainability frameworks (Kalefa & Gado, 2024). Global hotel chains illustrate how digital transformation generates competitive advantages through improved service personalization, operational excellence, and alignment with sustainability goals (Дудник, 2024).

In the Philippines, the government has placed digital transformation at the core of national development initiatives. The Philippine Development Plan (PDP) 2023–2028 identifies digitalization as a cross-cutting enabler of inclusive growth, supported by the National Broadband Plan, which aims to deliver universal, fast, and affordable connectivity (Serafica et al., 2023; Capistrano & Notorio, 2020). In the tourism sector, the Department of Tourism (DOT) has advanced digital tourism strategies, particularly during and after the COVID-19 pandemic, though significant implementation gaps remain at the operational level (Bade, 2024). Strengthening digital

readiness within regional tourism and hospitality enterprises is therefore vital to achieving national competitiveness and resilience in the face of technological disruption.

Within this broader national context, Cauayan City, Isabela is emerging as a strategic hub for smart, sustainable, and inclusive development in Northern Luzon. Recognized by the Department of Information and Communications Technology (DICT) as one of the Philippines' pioneering "Smart Cities," Cauayan has consistently pursued digital innovation in governance, business operations, and tourism management. Its rapidly expanding hotel and accommodation sector reflects the city's growing role as a gateway to Cagayan Valley and a model for integrating data-driven solutions into local service industries. The city's adoption of digital infrastructure and its active promotion of smart governance make it an ideal setting for studying the intersection of hospitality management, digital transformation, and sustainable urban growth. Moreover, Cauayan's hotel industry is undergoing significant expansion, driven by increased tourism activities, business travel, and local investment. However, despite this growth, the sector's capacity for smart transformation remains underexplored. Local hotels, particularly small and medium-sized establishments, face challenges related to technological adoption, staff digital literacy, and access to smart solutions. Understanding how these hotels perceive, adopt, and implement digital technologies is crucial in identifying enablers and barriers to competitiveness. As Cauayan positions itself as a digitally ready city, research on its hotel sector's digital transformation will provide valuable insights for policymakers, investors, and tourism planners seeking to foster sustainable and innovation-driven growth.

While global studies have extensively examined digitalization in large international hotel chains, there remains a notable gap in understanding how regional and small-to-medium-sized hotels in secondary cities like Cauayan adopt and integrate digital technologies. Prior research predominantly focuses on high-end or metropolitan contexts, overlooking localized dynamics, infrastructural limitations, and cultural factors that influence adoption behavior (Nikopoulou et al., 2023; Han et al., 2021). This lack of localized evidence in the Philippine context highlights the need for empirical inquiry into the determinants of digital technology adoption at the regional level.

International Journal of Education Management and Religion
Volume 3 No 2 July 2026
E-ISSN: 3090-3145
https://journal.as-salafiyah.id/index.php/ijemr/index
editoriemr@gmail.com

Understanding the drivers of digital transformation among hotels in Cauayan is therefore critical to advancing both theory and practice. In the post-COVID-19 landscape, digital readiness has become a key determinant of operational resilience, customer satisfaction, and long-term competitiveness. This study thus seeks to bridge the knowledge gap by exploring how hotels in Cauayan City adopt digital modern technologies, providing actionable insights for hotel managers, policymakers, and stakeholders seeking to foster a smart, data-driven, and competitive hospitality sector.

METHOD

Research Design

This study employed a descriptive–correlational research design to determine the factors influencing digital technology adoption among hotels in Cauayan City, Isabela, Philippines. The descriptive component was utilized to present the demographic and organizational profiles of hotel personnel and the current state of digital technology utilization, while the correlational component sought to establish the relationships between technological, organizational, cultural, and insight-related factors and the actual use of digital technologies. This design is suitable for identifying both patterns of adoption and associations among variables without manipulating the research environment.

Research Locale

The study was conducted in Cauayan City, Isabela, Philippines, an emerging tourism hub in Northern Luzon. The city has witnessed a steady increase in hospitality investments, with numerous small to medium-scale hotels integrating digital tools to improve operations and guest experiences. The locale was selected for its representativeness of secondary urban centers adopting digital innovation amid resource constraints.

Research Respondents

The population consisted of hotel managers, front desk officers, and key operational staff from seven hotels within Cauayan City. Using purposive and convenience sampling, 135 respondents were selected, comprising managers and staff.

International Journal of Education Management and Religion
Volume 3 No 2 July 2026
E-ISSN: 3090-3145
https://journal.as-salafiyah.id/index.php/ijemr/index
editoriemr@gmail.com

Research Instrument

A structured survey questionnaire was used as the primary data-gathering tool. The instrument was patterned from Han et al. (2021) and Nikopoulou et al. (2023) on determining the key drivers affecting digital technology usage and the actual use of digital technologies. To ensure instrument quality, the questionnaire underwent content and face validation by three experts in hospitality management. Revisions were made based on their feedback. A pilot test involving 30 hotel personnel outside the main sample was conducted, and the instrument achieved a Cronbach's alpha coefficient of 0.91, indicating excellent internal consistency and reliability across all dimensions.

Data Analysis

Descriptive and inferential statistics were employed using SPSS Version 26. Descriptive Statistics, such as the weighted means, summarized the key drivers affecting digital technology usage and the actual use of digital technologies. Pearson Product–Moment Correlation tested the relationships among the dimensions (technology, organization, culture, insights, financial, and Government regulations) and the extent of digital technology usage. Significance was established at the 0.05 level.

Ethical Considerations

Ethical standards were strictly observed. Participation was voluntary, and respondents could withdraw at any stage without penalty. Informed consent was obtained before participation. All data were treated with strict confidentiality and used solely for academic purposes. The study complied with the ethical review protocols of the host academic institution.

International Journal of Education Management and Religion
Volume 3 No 2 July 2026
E-ISSN: 3090-3145
https://journal.as-salafiyah.id/index.php/ijemr/index
editoriemr@gmail.com

RESULTS AND DISCUSSION

Key Drivers of Digital Technology Usage

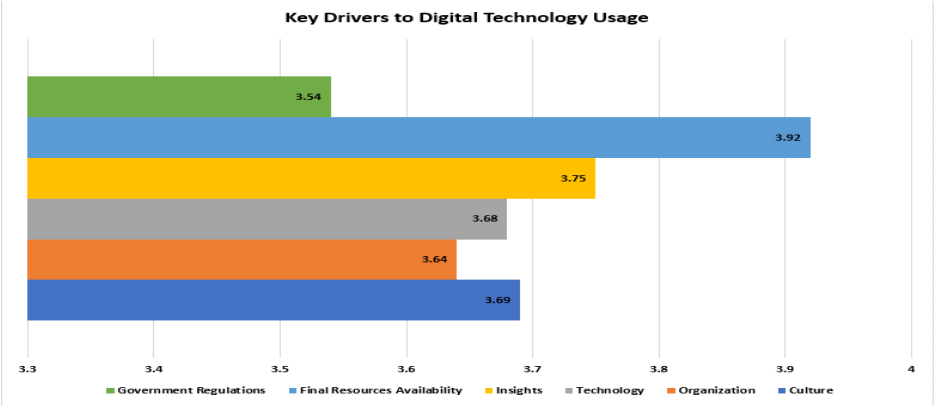

Figure 1. *Key Drivers of Digital Technology Usage*

Figure 1 above presents the key drivers of digital technology usage among seven hotels in Cauayan City, Isabela, Philippines. Specifically, the culture domain shows that the organization's leadership demonstrates a strong commitment to digitalization, particularly through management support and customer experience enhancement. This suggests a top-down approach in embedding digital strategies into the organizational mindset. While training initiatives exist, continuous capacity development remains an area for strengthening to sustain digital innovation and staff adaptability. A robust digital culture fosters employee engagement and ensures that digital initiatives are accepted and implemented effectively across all departments. On the other hand, the Organizational Dimension (M=3.64) domain emphasizes that the company allocates sufficient human and financial resources to design and execute its digital strategy and follows structured information system management processes. The results suggest that the organization has achieved a good level of structural readiness and governance in handling digital initiatives. However, ongoing investment in digital infrastructure and the development of staff competencies are crucial to maintain competitiveness and resilience in fast-evolving digital markets. Technological Dimension (M=3.68) component underscores the firm's flexibility in adapting to digital changes and its utilization of modern information systems. The strong agreement across items reflects a proactive approach in integrating advanced digital tools and leveraging customer feedback for continuous improvement. This implies that technology adoption is not static but dynamic, serving

as both a tool for operational efficiency and a driver for innovation and collaboration within the company. Insights Dimension (M=3.75) reveals a data-driven orientation in decision-making and strategy refinement. Employees understand how their roles align with digital goals, and customer feedback is systematically used to shape services. Using experiences from digital actions to refine strategies highlights an organizational learning culture, an advanced stage of digital maturity where reflection and analytics inform future directions.

The Financial Resources Availability (M=3.92) dimension recorded the highest mean, suggesting that the business possesses sufficient financial capacity to support and sustain digital initiatives. The availability of quick-access funding reflects strong fiscal management and investor confidence, which are vital enablers for continuous innovation and technological upgrades. This financial strength reduces risk aversion and allows the organization to explore emerging technologies more confidently.

Lastly, Government Regulations (M=3.54) scored the lowest among all categories. This indicates that although the organization recognizes the importance of regulatory compliance, government-mandated digital requirements, and associated costs (e.g., staff training and infrastructure alignment) present financial and operational challenges. The implication is that policy compliance, though necessary, imposes additional burdens on smaller enterprises and may limit the pace of digital transformation without proper governmental support or incentives.

Generally, results suggest that the organization is at an advanced level of digital readiness, characterized by strong leadership support, adequate financial resources, and a culture of innovation and learning. However, to sustain digital competitiveness, the business should prioritize continuous employee training, strategic partnerships for technological upgrading, and advocacy for more supportive regulatory frameworks that reduce compliance costs. From a strategic perspective, the findings imply that digital transformation success depends not only on technology acquisition but also on organizational alignment, financial agility, and regulatory adaptability. Businesses that maintain this equilibrium are more likely to achieve long-term digital resilience, customer satisfaction, and sustainable growth.

Research demonstrates that successful digital transformation requires a multifaceted strategic approach integrating technology, organizational capabilities, and leadership. Digital

International Journal of Education Management and Religion
Volume 3 No 2 July 2026
E-ISSN: 3090-3145
https://journal.as-salafiyah.id/index.php/ijemr/index
editoriemr@gmail.com

transformation success depends on strategic alignment between technology investments and organizational goals, with leadership playing a critical role in facilitating transformation initiatives (Chandratreya, 2024). Organizations must prioritize people elements, including organizational culture, workforce skills, and employee well-being, as primary drivers of technology implementation (Nkomo & Kalisz, 2023). Dynamic capabilities, innovation, and transformational leadership are essential for achieving sustained competitive advantage in digital environments, with agile organizational structures better positioned to address disruptive market forces (Amin & Asif Khan, 2025). Successful digital transformation requires integrating cutting-edge technologies like AI, cloud computing, and IoT with innovation strategies, while addressing challenges such as cybersecurity and digital skill shortages (Yoganandham & Kareem, 2025). The synthesis of these findings emphasizes that digital resilience emerges from balancing technological infrastructure investments with organizational culture development and adaptive leadership approaches.

Digital Technology Usage

	Use of Digital Modern Technologies	Mean	Descriptive Interpretation
1.	**Our hotel actively uses cloud technologies to manage operations and guest services efficiently.**	3.54	Strongly Agree
2.	**We integrate Artificial Intelligence (AI) into customer service and operational processes.**	2.34	Disagree
3.	**Blockchain technology is used in our hotel for secure transactions and data management**	1.66	Strongly Disagree
4.	**We utilize SaaS (Software as a Service) solutions for hotel management functions.**	3.60	Strongly Agree
5.	**Our hotel integrates open software interfaces to improve digital system efficiency.**	3.60	Strongly Agree
6.	**Our hotel analyzes guest interaction data (speech scripts, transaction data) to enhance customer service and financial management.**	3.54	Strongly Agree
7.	**We incorporate advertising technologies (digital assistants, nano-bloggers, chatbots) for marketing and guest engagement.**	3.69	Strongly Agree
8.	**Our hotel uses biometric and facial recognition for security and guest identification.**	2.51	Agree
9.	**We offer voice assistants to assist guests with inquiries and services.**	3.57	Strongly Agree
10.	**We provide an e-guest app for guests to explore services, book rooms, and manage reservations conveniently.**	3.54	Strongly Agree
11.	**Our hotel offers an e-booking mobile app to streamline the reservation process.**	3.66	Strongly Agree
12.	**Guests can make e-payments for secure and convenient transactions**	3.86	Strongly Agree
13.	**We provide an e-concierge service to assist guests with bookings, recommendations, and inquiries.**	3.71	Strongly Agree

International Journal of Education Management and Religion
Volume 3 No 2 July 2026
E-ISSN: 3090-3145
https://journal.as-salafiyah.id/index.php/ijemr/index
editoriemr@gmail.com

14.	**Our hotel uses a smart room key system (or keyless entry via a mobile app) for guest convenience and security.**	3.83	Strongly Agree
15.	**We provide touchscreen-based control panels for guests to manage lighting, temperature, and entertainment.**	3.54	Strongly Agree
16.	**Guests have access to high-speed wireless internet for seamless connectivity.**	3.63	Strongly Agree
17.	**Our hotel offers in-room voice assistants to help guests control room features and request services.**	1.66	Strongly Disagree
18.	**We use smart sensors to adjust lighting, temperature, and energy usage based on occupancy.**	1.54	Strongly Disagree
19.	**Our hotel provides autonomous delivery robots for room service and guest amenities.**	1.00	Strongly Disagree
20.	**We use service robots to efficiently deliver meals and other services to guests.**	1.00	Strongly Disagree
21.	**Guests can use Virtual Reality (VR) headsets for an immersive hotel experience.**	1.29	Strongly Disagree
22.	**Our hotel integrates Augmented Reality (AR) technologies to enhance the guest experience.**	1.34	Strongly Disagree
23.	**We offer mobile fast check-in to reduce wait times at the front desk**	3.71	Strongly Agree
24.	**Our hotel provides a mobile fast check-out option for a smooth and hassle-free departure. Our hotel provides a mobile fast check-out option for a smooth and hassle-free departure.**	2.69	Agree
Overall Mean		2.84	Agree

LEGEND 1.00-1.74 Strongly Disagree (SD), 1.75-2.49 Disagree (D), 2.50-3.24 Agree (A), 3.25-4.00 Strongly Agree (SA)

***Table 1**. Digital Modern Technologies Usage*

Table 1 presents the digital technology usage of seven identified hotels in Cauayan City, Isabela, Philippines. The overall mean of 2.84 indicates that hotels demonstrate a moderate level of digital modern technology adoption. This suggests that while hotels recognize and implement certain established technologies to enhance operations and guest services, the integration of advanced and emerging innovations remains limited. The digitalization efforts are present but uneven, strong in foundational areas yet underdeveloped in high-tech, AI-driven, and automated systems.

High Adoption of Foundational Digital TechnologiesIndicators such as cloud technologies (M=3.54), SaaS solutions (M=3.60), open software interfaces (M=3.60), e-payments (M=3.86), smart room key systems (M=3.83), and mobile check-in (M=3.71), show that the hotels have effectively implemented core digital platforms that improve efficiency, enhance guest experience, and streamline operations. These technologies reflect operational digital maturity, a focus on improving service accessibility, security, and convenience. The widespread use of mobile applications and e-concierge systems (M=3.71) underscores a strong commitment to customer-

centric innovation, allowing guests to access hotel services conveniently through mobile and online channels.

Some technologies, such as biometrics (M=2.51) and mobile fast check-out (M=2.69), received moderate ratings, implying partial adoption or limited deployment. While hotels recognize their value in enhancing security and streamlining processes, these systems may not yet be fully integrated across all departments or branches. Factors such as cost of installation, technical expertise, and data privacy considerations could be limiting their wider adoption.

Respondents claimed that AI (M=2.34), blockchain (M=1.66), smart sensors (M=1.54), robotics (M=1.00), VR (M=1.29), and AR (M=1.34) are not yet present in their hotels. These results clearly illustrate that advanced digital technologies are largely absent or minimally utilized in hotel operations. This finding suggests a digital maturity gap, where hotels prioritize practical, well-established tools over experimental or capital-intensive technologies. The lack of AI, automation, and immersive systems limits opportunities for deeper personalization, predictive analytics, and unique guest experiences.

The data reveal a stark contrast between basic digital infrastructure (e.g., cloud systems, e-payments, mobile apps) and cutting-edge innovations (e.g., robotics, AR/VR, AI). Hotels appear to focus on technologies that provide immediate operational benefits and cost efficiency, rather than those that require higher initial investment or technical expertise. The strong performance in digital payment and connectivity systems suggests that hotels are digitally ready but not yet digitally advanced.

Generally, the data reveal that hotels are digitally active but not yet digitally advanced. Their strong reliance on established digital systems positions them well in terms of operational efficiency and guest satisfaction. However, the very low adoption of emerging technologies underscores a strategic gap in innovation readiness. Bridging this gap requires investment, capacity building, and policy support to transition from digital awareness to digital excellence. A sustained focus on advanced technologies such as AI, IoT, and immersive systems will ultimately enable hotels to achieve sustainable competitiveness and service differentiation in the digital hospitality era.

The hospitality industry is undergoing a significant digital transformation driven by technological innovations that enhance operational efficiency and customer satisfaction. Research

International Journal of Education Management and Religion
Volume 3 No 2 July 2026
E-ISSN: 3090-3145
https://journal.as-salafiyah.id/index.php/ijemr/index
editoriemr@gmail.com

indicates that hotels' adoption of digital technologies is influenced by organizational digital maturity, financial resources, and government regulations, with COVID-19 accelerating this trend among small and medium-sized hotels (Nikopoulou et al., 2023). Key technologies transforming the sector include artificial intelligence, Internet of Things, automation, and big data analytics, which improve service quality and personalize guest interactions (Dudnyk, 2024). Hotels are implementing foundational digital platforms such as cloud technologies, SaaS solutions, mobile applications, and e-concierge systems to streamline operations and enhance guest experiences (Giannoukou, 2024). Success requires balancing traditional hospitality values with modern technological solutions through strategic planning, innovation management, and cultural adaptability (Bevz, 2024). The integration of AI and robotics shows promise for revolutionizing guest experiences while maintaining competitive service offerings in the evolving hospitality landscape.

Relationship between Key Drivers and Digital Technology Usage

Variables	Pearson Correlation	Sig.	Interpretation
Culture ↔ Use of Digital Modern Technologies	0.486**	0.003	Significant
Organization ↔ Use of Digital Modern Technologies	0.540**	0.001	Highly Significant
Technology ↔ Use of Digital Modern Technologies	0.537**	0.001	Highly Significant
Insights ↔ Use of Digital Modern Technologies	0.486**	0.003	Significant
Financial Resources Availability ↔ Use of Digital Modern Technologies	0.458**	0.004	Significant
Government Regulations ↔ Use of Digital Modern Technologies	0.392*	0.018	Significant

*Significant at .05 level of significance

Table 2. *Relationship between Key Drivers and Digital Technology Usage*

Table 2 shows the significant relationship between key drivers of Digitalization and digital Technology Usage using Pearson's r correlation. The results of the correlation analysis indicate a moderate to strong positive relationship between the use of digital modern technologies and several organizational, technological, cultural, and environmental factors. Specifically, organizational factors ($r = 0.540$, $p = 0.001$) and technology availability ($r = 0.537$, $p = 0.001$) exhibit the strongest and highly significant positive correlations, suggesting that internal structures, leadership support, and access to technological resources are critical drivers of digital technology adoption. Cultural

influences (r = 0.486, p = 0.003) and the use of analytical insights (r = 0.486, p = 0.003) also show significant positive relationships, indicating that a pro-digital culture and data-driven decision-making moderately encourage adoption. Similarly, the availability of financial resources (r = 0.458, p = 0.004) positively supports the implementation of digital technologies, highlighting the role of adequate funding in facilitating technological integration. Government regulations (r = 0.392, p = 0.018) demonstrate a significant, albeit weaker, positive correlation, suggesting that while policy and regulatory frameworks influence adoption, their effect is less pronounced than internal organizational and technological factors. Generally, the findings underscore that successful adoption of digital modern technologies is not solely dependent on external policies or financial support but is strongly influenced by the organization's culture, technological readiness, and strategic utilization of insights. These results align with theoretical frameworks such as the Technology-Organization-Environment (TOE) model and the Diffusion of Innovations theory, emphasizing the interplay between organizational capability, technological infrastructure, and environmental context in facilitating digital transformation. Consequently, organizations seeking to enhance technology adoption should prioritize strengthening internal structures, cultivating a supportive culture, leveraging data insights, and ensuring adequate technological and financial resources, while also considering the enabling role of government regulations.

Research on digital technology adoption in hotels consistently employs the Technology-Organization-Environment (TOE) framework to understand key determinants. Multiple studies demonstrate that technological, organizational, and environmental factors significantly influence ICT adoption in hospitality settings (Nikopoulou et al., 2023; Agegnehu et al., 2019). Key technological factors include digital maturity, technology readiness, and cross-technology compatibility (Nikopoulou et al., 2023; Tung & Lin, 2024). Organizational determinants encompass financial resources, organizational innovativeness, and manager ICT knowledge (Nikopoulou et al., 2023; Agegnehu et al., 2019). Environmental factors include government regulations, competitor pressure, and COVID-19 impacts, with small and medium-sized hotels showing increased adoption during the pandemic (Nikopoulou et al., 2023; Tung & Lin, 2024). Importantly, these factors are interdependent rather than independent, with technological context serving as a primary driver that influences organizational outcomes (Tung & Lin, 2024).

International Journal of Education Management and Religion
Volume 3 No 2 July 2026
E-ISSN: 3090-3145
https://journal.as-salafiyah.id/index.php/ijemr/index
editoriemr@gmail.com

Organizational size and innovativeness moderate these relationships, particularly during crisis periods (Nikopoulou et al., 2024).

CONCLUSION

This study examined the key drivers influencing the usage of digital technologies among hotels in Cauayan City, Isabela, Philippines. Guided by the Technology–Organization–Environment (TOE) and Technology Adoption frameworks, it sought to identify the main factors affecting digital technology usage, assess the level of adoption, and determine the relationships between these drivers and actual usage.

Findings revealed that financial resources, organizational readiness, technological infrastructure, and a culture of innovation play crucial roles in shaping digital transformation within hotels. The strong positive correlations between organizational and technological factors and digital usage underscore the importance of leadership commitment, system readiness, and staff competence in driving adoption. Conversely, limited implementation of advanced technologies such as AI, robotics, and virtual or augmented reality highlights existing gaps in innovation capacity, technical expertise, and investment readiness.

The study confirms that digital transformation in hospitality is not merely a technological shift but a strategic and cultural one - requiring alignment between people, processes, and digital tools. Hotels that cultivate an adaptive culture, invest in continuous training, and leverage data-driven insights are better positioned to achieve operational excellence and customer satisfaction. This research lies in its contribution to understanding how local hotels can transition from basic digital adoption toward smart, sustainable, and data-driven hospitality operations. As a call to action, hotel managers and policymakers are encouraged to prioritize innovation capacity-building, allocate resources for emerging technologies, and advocate for supportive regulatory and incentive frameworks. Through these concerted efforts, the hospitality sector can strengthen its digital resilience and competitiveness in the evolving landscape of tourism and service management.

REFERENCE

Amin, N. U., & Khan, M. A. (2024). Driving competitive advantage in the digital era: The role of dynamic capabilities, innovation, and leadership. *Dinasti International Journal of Economics, Finance and Accounting*, 5(5), 5500–5514. https://doi.org/10.38035/dijefa.v5i5.3873

Bade, B. A. (2024). Relationship of digital tourism strategies and performance of beach and water-themed resorts in Misamis Oriental amidst the new normal. *Cultural Landscapes Insights*, 2(1), 24–33. https://doi.org/10.59762/cli90132453212024030515295 4

Bevz, A. (2024). Innovation research in the hotel business. *Economies' Horizons*, 2–3(28), 102–110. https://doi.org/10.31499/2616-5236.2(28).2024.305695

Buhalis, D. (2020). Technology in tourism — From information communication technologies to eTourism and smart tourism towards ambient intelligence tourism: A perspective article. *Tourism Review*, 75(1), 267–272. https://doi.org/10.1108/TR-06-2019-0258

Capistrano, R. C., & Notorio, P. A. (2020). A content analysis of the future of tourism through the presidential state of the nation address in the Philippines (1987–2019). *Journal of Tourism Futures*, Advance online publication. https://doi.org/10.1108/jtf-05-2020-0075

Çeltek, E. (2023). Analysis of smart technologies used in smart hotels. *Journal of Business Research-Turk*, 15(4). https://doi.org/10.20491/isarder.2023.1754

Chandratreya, A. (2024). Digital transformation strategy and management. *International Journal of Scientific Research in Engineering and Management*, 8(10), 1–5. https://doi.org/10.55041/ijsrem38058

Dudnyk, S. (2024). Innovations in hotel management: The impact of new technologies on improving customer service. *Economy and Society*, (66). https://doi.org/10.32782/2524-0072/2024-66-66

Dudnyk, S. (2024). Innovations in hotel management: The impact of new technologies on improving customer service. *Ekonomika ta Suspilstvo*, (66). https://doi.org/10.32782/2524-0072/2024-66-66

Gajić, T., Petrović, M. D., Pešić, A. M., Conić, M., & Gligorijević, N. (2024). Innovative approaches in hotel management: Integrating artificial intelligence (AI) and the Internet of

Things (IoT) to enhance operational efficiency and sustainability. *Sustainability*, 16(17), 7279. https://doi.org/10.3390/su16177279

Gayathri, N. (2025). Enhancing efficiency of hospitality and tourism sector with artificial intelligence. *ComFin Research*, 13(S1-i1), 74–77. https://doi.org/10.34293/commerce.v13iS1-i1-Mar.8657

Giannoukou, I. (2024). Revolutionizing hospitality: Strategic integration of innovation management embracing technological innovation for enhanced customer experiences. *Technium Business and Management*, 7, 24–39. https://doi.org/10.47577/business.v7i.10585

Han, D., Hou, H. (Cynthia), Wu, H., & Lai, J. H. K. (2021). Modelling tourists' acceptance of hotel experience-enhancement smart technologies. *Sustainability*, 13(8), 4462. https://doi.org/10.3390/su13084462

Kalefa, H., & Gado, S. (2024). Enhancing hotel sustainability through ecological and technological integration. *Journal of Engineering Sciences*, 52(1), 145–174. https://doi.org/10.21608/jesaun.2024.251412.1290

Mariani, M. (2020). Big data and analytics in tourism and hospitality: A perspective article. *Tourism Review*, 75(1), 299–303. https://doi.org/10.1108/TR-06-2019-0259

Menen, L. A., Kenenisa, L., & Firew, M. (2019). Factors influencing the adoption of information communication technology (ICT) in selected, rated hotels in Addis Ababa, Ethiopia. *Journal of Process Management and New Technologies*, 7(4), 13–23. https://doi.org/10.5937/jouproman7-22841

Mazilescu, V. (2020). Tourism and travel can effectively benefit from technologies associated with Industry 4.0. In *International Conference "Risk in Contemporary Economy"*, Galati, Romania. https://doi.org/10.35219/rce206705327

Nikopoulou, M., Kourouthanassis, P., & Pateli, A. (2024). The role of organizational innovativeness and size on information and communication technology (ICT) adoption during COVID-19: Evidence from the hospitality industry. *Tourism*, 72(1), 40–55. https://doi.org/10.37741/t.72.1.4

Nikopoulou, M., Kourouthanassis, P., Chasapi, G., Pateli, A., & Mylonas, N. (2023). Determinants of digital transformation in the hospitality industry: Technological, organizational, and environmental drivers. *Sustainability*, 15(3), 2736. https://doi.org/10.3390/su15032736

Nkomo, L., & Kalisz, D. (2023). Establishing organisational resilience through developing a strategic framework for digital transformation. *Digital Transformation Strategy*, 2(4), 403–426. https://doi.org/10.1108/dts-11-2022-0059

Serafica, R., Francisco, K., & Oren, Q. C. (2023). Making broadband universal: A review of Philippine policies and strategies. https://doi.org/10.62986/dp2023.31

Tung, P. T., & Lin, C.-P. (2024). Digitalization of small and medium-sized hotels in Vietnam: Interdependent critical factors. *International Journal of Religion*, 5(6), 1129–1145. https://doi.org/10.61707/tr0bbh37

Yoganandham, G., & Kareem, A. A. (2025). Strategic digital transformation for sustainable business growth and economic resilience: An empirical assessment. *International Journal of Latest Technology in Engineering, Management & Applied Science*, 14(7), 1–10. https://doi.org/10.51583/ijltemas.2025.1407000054

Zeqiri, A., Ben Youssef, A., & Maherzi Zahar, T. (2025). The role of digital tourism platforms in advancing sustainable development goals in the Industry 4.0 era. *Sustainability*, 17(8), 3482. https://doi.org/10.3390/su17083482