



Research Paper

Effects of Cloud Computing on the Operational Performance of DOT-Accredited Hotels in Laguna

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Abstract.

This study addressed the research gap in understanding the perceived effect of cloud computing in Department of Tourism (DOT) accredited hotels in Laguna, Philippines, focusing on timely information circulation, decision making, and record management. The rationale stemmed from the need to enhance technological advances in the local business environment, particularly within the travel and tourism sector. While existing literature acknowledges the general benefits of cloud computing in hospitality, limited research specifically explores its application in DOT-accredited hotels in the Laguna region.

The study specifically sought to assess the perceived effects of cloud computing on the operational performance of DOT-Accredited Hotels. A descriptive correlation design was employed. Respondents are hotel owners and managers for thirty-one DOT-accredited hotels in Laguna. Survey questionnaire was the main instrument to gather data. Statistical tools such as percentage frequency distribution, weighted mean, standard deviation, and Pearson correlation coefficient are used for data analysis.

Findings indicated a high level of cloud computing utilization in timely information circulation, decision making, and record management. Respondents perceived cloud computing as highly effective in pre-arrival, arrival, occupancy, and departure stages of hotel operations. The Pearson correlation coefficient confirmed a significant relationship between cloud computing and Operational Performance in DOT-accredited hotels in Laguna.

In conclusion, cloud computing is widely used and highly effective in enhancing the efficiency of hotel operations.

The significant correlation implied that the implementation of cloud computing has a substantial impact on operational performance of DOT-accredited hotels in Laguna. These findings contribute valuable insights for both academia and industry practitioners, emphasizing the importance of embracing cloud technologies for improved business performance in the local hospitality sector.

Keywords:

Cloud Computing,
Operational Performance,
DOT-Accredited Hotels

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I. Introduction

Cloud services are infrastructure, platforms, or software that are hosted by another entity and made accessible to customers online. They are crucial in the hospitality industry, as they help manage various tasks such as guest reservations, check-ins, and amenities like housekeeping, food and beverage, and maintenance. The benefits of using information technology in the hospitality industry include improving service quality, enhancing long-term business development, improving efficiency, and integrating departments.

Technological advancements in the hotel sector have allowed for the use of cloud-based booking and check-in services, allowing guests to reserve rooms remotely and complete the check-in process. Cloud services also allow hotels to securely store and manage their booking data in the cloud.

Cloud computing has revolutionized the hotel industry by providing adaptable and scalable options for storing, backing up, and managing data. It has improved operational effectiveness and allowed hotel professionals to access essential information remotely, ensuring connectivity even when away.

Researchers are exploring the effects of cloud technology adoption and integration on hotels' daily operations to gain insights into improving operational effectiveness in the hospitality sector. This area presents a chance for researchers to investigate the precise mechanisms affecting different hotel operations and find viable performance optimization approaches.

II. Theoretical Background

This study utilizes socio-technical theory and Resource Based View Theory (RBV) to examine the acceptance and adoption of cloud computing in hotel operations. The socio-technical theory, developed by Eric Trist, Ken Bamforth, and Fred Emery, suggests that the interaction of social and technical factors creates conditions for successful system performance. It emphasizes joint optimization, stating that improving one aspect of an organization and abandoning the other (digital facilities) will be detrimental to the organization. The study aims to assess how cloud computing can improve reservation management, data analytics, and inventory control in hotel operations. The RBV theory emphasizes the importance of integrating strategic management perspectives, emphasizing human resources and technological resources for a competitive advantage. It highlights the benefits of technology in improving tangible resources like servers, networks, and storage devices, as well as intangible skills like knowledge and organizational processes. The integration of cloud computing can contribute to organizational capabilities through scalability, adaptability, and collaboration.

III. Research Question or Research Hypothesis or Problem Statement

It specifically tackles the impact of cloud computing on the operational performance of DOT-accredited hotels in Laguna. It aims to understand the perceived effects of cloud computing on timely information circulation, decision making, and record management. The study also examines respondents' perception of cloud computing's effectiveness in various stages of hotel operations and whether there is a significant relationship between cloud computing and operational performance.

IV. Data and Methods

In the study, researchers ensured ethical compliance and comprehensive data gathering through several methodological steps. First, participants' willingness was confirmed, and consent forms were provided before administering the survey. The researchers personally distributed questionnaires to DOT-accredited hotels in Laguna, facilitating face-to-face interaction for clarity. To guarantee coverage, they requested an official list of hotels from LTCATO. After data collection, a pilot test was conducted to refine the questionnaire, and Cronbach's alpha test assessed its reliability. These steps aimed to uphold ethical standards, maintain accuracy, and achieve a representative sample.

V. Results

Table 1 shows the summary of mean results of the Perceived Effects of Cloud Computing among DOT-Accredited Hotels in Laguna.

Table 1. Summary of the Mean Results

| | Weighted Mean | Verbal Interpretation |
|--------------------------------|---------------|-----------------------|
| Timely Information Circulation | 4.18 | High |
| Decision Making | 4.04 | High |
| Record Management | 4.21 | Very High |

The perceived effect of cloud computing on the respondents in terms of timely information circulation. The statement “The hotel uses Cloud Computing for ensuring timely information dissemination.” obtained the highest mean score of 4.33 (SD = 0.99). Lastly, statement "There are real-time updates on room availability and reservations." obtained the lowest mean score of 3.93 (SD = 1.11). The overall score of 4.18 (SD = 0.99) indicates that the effects of cloud computing for the respondents in terms of timely information circulation were verbally interpreted as High.

The findings emphasize the importance of cloud computing in ensuring timely information circulation within the hotel industry. It highlights that this technology significantly enhances the efficiency of communication and information dissemination among guests and employees. This is in line with the study by Narayan et al. (2022), which found that cloud computing services can facilitate real-time communication, provide a centralized database for information storage and access, and enable mobile access to information. These aspects collectively contribute to the seamless operation of hotel services, thereby improving the overall guest experience.

In terms of decision making, the statement “Data stored on cloud servers is frequently accessed and used to generate reports that guide strategic decisions for the hotel.” obtained the highest mean score of 4.20 (SD = 0.96). Lastly, statement "Cloud-based collaboration tools are often used to facilitate communication and decision-making among various departments." obtained the lowest mean score of 3.81 (SD = 1.17). The overall score of 4.04 (SD = 0.93) indicates that the perceived effect of cloud computing for the respondents in terms of decision making were verbally interpreted as High.

These findings indicate that the use of cloud computing services in decision-making processes within the hotel industry is highly significant and prevalent. According to James & Edwin (2019), effective decision-making is crucial for the advancement of every institution or organization, as it provides a clear path forward and ensures that resources are utilized effectively and efficiently. Thus, the high level of utilization by the respondents means they recognize the value and benefits of this technology.

The extent of respondents’ awareness in terms of record management. The statement “Uses cloud computing in recording management’s data and information.” obtained the highest mean score of 4.33 (SD = 1.03). Lastly, statement Cloud computing services are used to collect, organize, and store employees’ and client information." obtained the lowest mean score of 4.00 (SD = 1.17). The overall score of 4.21 (SD = 1.06) indicated that the perceived effect of cloud computing for the respondents in terms of record management were verbally interpreted as Very High.

These findings reveal the pivotal role of cloud computing in the record management, which supports the notion of Cobanoglu et al. (2021) that cloud technologies play an integral part in hotel operations and significantly contribute to the hotel's efficiency and record-keeping practices. This is consistent with the findings of Haskew et al. (2018), who highlighted the advantages that come with implementing Cloud Computing Services, such as improved dependability, reduced expenses, remote access to data, scalability, and flexibility. Additionally, it allows for freedom from server ownership responsibilities and enhances business processes as well as enhanced security measures to prevent data loss, encourages collaboration among stakeholders and ensures uninterrupted operations in case of emergencies or disasters.

Table 2 shows the summary of mean results of the perceived level of effectiveness of utilizing cloud computing in the following hotel operations.

Table 2. Summary of the Mean Results

| | Weighted Mean | Verbal Interpretation |
|-------------------|----------------------|------------------------------|
| Pre-Arrival Stage | 4.34 | Very Effective |
| Arrival Stage | 4.26 | Very Effective |
| Occupancy Stage | 4.19 | Effective |
| Departure Stage | 4.29 | Very Effective |

On the other hand, in the following hotel operations in terms of pre-arrival terms shows the perceived level of effectiveness of utilizing cloud computing. The statement “Within the domain of Cloud Computing, it is easier to manage customer service, address inquiries, and maintain client communication, ensuring a smooth client experience” obtained the highest mean score of 4.53 (SD = 0.78). Lastly, statement "Cloud computing

systems allow for easy customization and accommodation of special requests from guests before their arrival." obtained the lowest mean score of 4.13 (SD = 1.01). The overall score of 4.34 (SD = 0.86) indicates that perceived level of effectiveness of utilizing cloud computing in the following hotel operations in terms of pre-arrival were verbally interpreted as Very Effective.

These findings reveal that the integration of cloud-computing technology was perceived as valuable in hotel operations, specifically in the pre-arrival stage. According to Srimal (2018), visitors prefer hotels to utilize technology for contactless service during the guest cycle, starting from pre-arrival. Technology not only enhances customer service and communication but also allows for the easy customization and accommodation of special requests, thereby ensuring a smooth and personalized guest experience.

In terms of arrival, the statement "Cloud-based data storage enables seamless access to guest information, ensuring personalized welcomes and smoother check-ins." obtained the highest mean score of 4.50 (SD = 0.86). Lastly, statement "By using cloud computing services, issues are quickly fixed, and effective management is constantly performed." obtained the lowest mean score of 4.07 (SD = 0.98). The overall score of 4.26 (SD = 0.95) indicates that perceived level of effectiveness of utilizing cloud computing in the following hotel operations in terms of arrival were verbally interpreted as Very Effective.

These findings highlight the importance of technology in enhancing the guest experience and the need for continuous investment in cloud computing technology. Cloud computing can help hotels deliver great guest experiences by centralizing reservations, managing room inventory, tracking guest preferences, and streamlining front desk operations (Stringam & Gerdes, 2021). As the hospitality industry continues to evolve, hotels that keep up with the latest technological advancements will likely have a competitive edge (Anning-Dorson & Nyamekye, 2020). Therefore, continuous investment in cloud computing technology is crucial for hotels to stay ahead of the competition and deliver superior guest experiences.

Moving on to occupancy, the statement "Cloud computing ensures that facilities are complete and easily accessible for guests." obtained the highest mean score of 4.37 (SD = 0.93). Lastly, statement "Within the domain of cloud computing services, maintaining a clean and comfortable environment is equally important as ensuring excellent functionality and user satisfaction." obtained the lowest mean score of 4.03 (SD = 1.16). The overall score of 4.19 (SD = 0.93) indicates that perceived level of effectiveness of utilizing cloud computing in the following hotel operations in terms of occupancy were verbally interpreted as Effective.

These findings highlight that cloud computing has been transforming the hospitality industry by providing a more efficient and streamlined back office, which can lead to happier guests (Gangwar & Reddy, 2023). Therefore, hoteliers should utilize cloud computing to improve their operations and guest satisfaction, especially during occupancy.

Lastly, in terms of departure, the statement "Utilizing cloud computing to facilitate a quick and easy check-out process for clients." obtained the highest mean score of 4.53 (SD = 0.86). Lastly, statement "Leveraging cloud computing for efficient problem-solving, ensuring fast issue resolution and proper management." obtained the lowest mean score of 4.07 (SD = 1.11). The overall score of 4.29 (SD = 0.96) indicates that perceived level of effectiveness of 38 utilizing cloud computing in the following hotel operations in terms of departure were verbally interpreted as Effective.

These findings highlight how cloud computing provides numerous benefits for the hospitality industry, allowing businesses to maximize their return on investments and explore innovative technological advancements that enhance customer satisfaction and loyalty. Additionally, cloud computing offers a cost-effective solution that minimizes risk and promotes scalability in the hospitality sector (Ghosh & Sen, 2023).

VI. Conclusions

Based on the findings of the study, the researchers draw the following conclusions:

1. Cloud computing was highly effective for the respondents in terms of timely information circulation, decision making, and record management.
2. The respondents perceive that cloud computing was very highly effective in hotel operations, specifically in the stages of pre-arrival, arrival, occupancy, and departure. This suggests that cloud computing is beneficial and significantly enhances the efficiency and effectiveness of these operations.

3. There is a connection between cloud computing and the operational performance of DOT-accredited hotels in Laguna. This implies that the implementation and utilization of cloud computing has a substantial impact on the operations of these hotels.

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