

Green Adoption Practices and Technological Integration as Predictor of Service Quality of Hotels in Bacolod City Negros Occidental

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ABSTRACT

This study examined the associations of green adoption practices and technological integration with perceived service quality in four Department of Tourism-accredited hotels in Bacolod City, Negros Occidental. A quantitative descriptive-comparative and correlational design was used. Two independent respondent-level samples participated: 120 hotel personnel selected through proportionate stratified sampling and 191 hotel guests selected through quota sampling. Personnel rated green adoption practices and technological integration, whereas guests rated perceived green adoption practices, technological integration, and service quality. Analyses were conducted separately by respondent group. The employee-level correlation between green adoption practices and technological integration used 120 personnel records; the corresponding guest-level correlation used 191 guest records. The multiple regression used only the 191 complete guest records, so both predictors and the service-quality outcome came from the same respondents; employee and guest records were neither matched nor pooled. Personnel and guests generally reported high to very high levels across the measured dimensions. Green adoption practices and technological integration were strongly positively correlated within each respondent group. In the guest-level regression, both green adoption practices ($\beta = .699$, $p < .001$) and technological integration ($\beta = .251$, $p < .001$) were significant positive predictors of perceived service quality, with green adoption practices showing the larger standardized coefficient. Because the design was cross-sectional and correlational, these findings indicate predictive associations rather than causal effects. The results support coordinated sustainability and technology initiatives while underscoring the need for cautious interpretation at the respondent level.

Keywords: Hospitality Management, Hotel Green Practices, Service Quality, Descriptive Comparative design, Philippines.

INTRODUCTION

Green adoption practices in the hospitality industry refer to environmentally responsible actions and strategies that hotels implement to minimize negative ecological impacts while enhancing operational efficiency and competitiveness (Abdou et al., 2020). Broadly, green practices encompass initiatives such as energy conservation, waste reduction, water efficiency, and sustainable procurement, aligning with the three pillars of sustainability: environmental, social, and economic performance (Ocho et al., 2025). Green practices help reduce carbon footprints, conserve natural resources, and promote social responsibility among stakeholders, which contributes to broader sustainable development goals within the services sector (Siti Kholijah, 2024). The academic literature strongly emphasizes the importance of green adoption, noting that hotels globally are integrating sustainability as part of their core operations to respond to heightened consumer environmental awareness and regulatory pressures (Popôa, 2023).

In the context of the Asian and Philippine hospitality industry, the adoption of green practices has steadily gained momentum but remains unevenly studied (Ofalla, 2024). Research in Philippine settings indicates that hotels engage in energy management, water conservation, waste management, and green purchasing as part of their

sustainability programs, which significantly influence perceived economic, social, and environmental performance (Waniwan & Cabaguing, 2025). Despite policy encouragement and industry initiatives, local empirical literature on the implementation and impact of green practices on service quality and competitive advantage remains limited, pointing to the need for deeper investigation in specific regional contexts such as Negros Occidental and other emerging tourism hubs within the Philippines and broader Asia (Oliveras-Villanueva et al., 2020).

Technological integration in the hotel industry refers to the adoption and application of digital and information technologies in operational, administrative, and guest-facing processes (Amirulloh Anwar et al., 2024). Technological integration is applicable in areas such as booking and reservation systems, customer relationship management platforms, self-service kiosks, digital guest engagement tools, and operational analytics (Wynn & Lam, 2023). Advances in information and communication technologies (ICT) transform how services are delivered, operational efficiency is achieved, and guest experiences are enhanced, enabling hotels to remain competitive in a rapidly evolving market. The literature identifies technology adoption as a strategic response to shifts in consumer expectations, competition, and market disruptions—a trend that became especially pronounced during and after the COVID-19 pandemic (Somera & Petrova, 2024). Emerging conceptual frameworks such as the detection-engagement-agility-continuity (DEAC) model further illustrate how technological integration supports organizational capability building, guest engagement, and sustained innovation across hotel services.

Service quality in the hotel industry is defined as the extent to which hotel services meet or exceed guests' expectations, often measured through multi-dimensional frameworks such as SERVQUAL. The SERVQUAL model, developed by Parasuraman, Zeithaml, and Berry, identifies five core dimensions of service quality—tangibility, reliability, responsiveness, assurance, and empathy—which are widely utilized to assess perceived service performance across global hospitality contexts (Zeithaml & Berry, 1988). High service quality is a critical determinant of guest satisfaction, loyalty, and competitive advantage in hotels, as it reflects both operational excellence and experiential delivery. Studies in various global and regional settings have shown that improvements in service quality dimensions correspond with enhanced guest evaluations, repeat patronage, and positive behavioral intentions (Olawuyi & Kleynhans, 2025). However, despite its extensive application, research on how service quality interacts with sustainability and technological factors in local hotel settings remains limited, particularly in developing economies such as the Philippines.

While the international literature on sustainability, technology adoption, and service quality in hospitality is substantive, research gaps remain in the local Philippine context. Although studies have been conducted on the green practices of select hotels and the use of technology for guest satisfaction, few have systematically examined the combined influence of green adoption and technological integration on overall service quality from both hotel staff and guest perspectives. This gap is compounded by the scarcity of empirical research exploring specific technological dimensions such as detection, engagement, agility, and continuity within the hospitality literature, particularly in Southeast Asia. Furthermore, much of the existing research has focused on either environmental sustainability or guest satisfaction independently, leaving the integrated effects of sustainability and technology on service quality underexplored (Oliveras-Villanueva et al., 2020).

The motivation for conducting this study stems from the need to address these gaps by generating empirical evidence on how green adoption practices and technological integration collectively drive service quality outcomes in hotels (Al-Husain et al., 2024). Bacolod City, Negros Occidental, represents a dynamic tourism environment with diverse hotel types, making it an ideal setting to investigate these relationships. Understanding these drivers is essential for local hotel stakeholders, including managers, staff, and policymakers, as they strive to enhance service excellence, sustainability performance, and competitive positioning in an increasingly complex hospitality landscape. Moreover, the findings of this research may provide valuable insights for future studies and practical applications across similar contexts, contributing to the broader academic discourse on sustainable and technology-enabled hospitality service quality (Singh et al., 2024).

Objectives of The Study

This study aimed to investigate the influence of Green Adoption Practices and Technological Integration on the Service Quality of hotels in Bacolod City, Negros Occidental. Specifically, it sought to answer the following questions:

1. What is the extent of green adoption practices in terms of Environmental factors, Social Factors and Economic Factors of hotels in Bacolod City when grouped according to Employees demographic profile
2. What is the extent of technological integration in terms of Detection, Engagement, Agility and Continuity of hotels in Bacolod City when grouped according to Employees demographic profile
3. What is the level of service quality in terms of Tangibility, Reliability, Responsiveness, Assurance and Empathy of hotels in Bacolod City when grouped according to guest demographic profile
4. Is there a significant difference in the extent of green adoption practices in terms of Environmental factors, Social Factors and Economic Factors of selected hotels in Bacolod City when grouped according to the Employees and Guest profile?
5. Is there a significant difference in the extent of technological integration in terms of Detection, Engagement, Agility and Continuity of selected hotels in Bacolod City when grouped according to the Employees and Guest profile?
6. Is there a significant difference in the level of service quality in terms of Tangibility, Reliability, Responsiveness, Assurance and Empathy of selected hotels in Bacolod City when grouped according to the hotel guest profile?
7. Is there a significant relationship between the extent of green adoption practices and technological integration?
8. Is there a significant relationship among the green adoption practices and technological integration as predictor to service quality in selected hotels in Bacolod City?

Hypotheses

The researcher advanced the following hypothesis:

1. There is no significant difference in the extent of green adoption practices when grouped according to employees and guest profile.
2. There is no significant difference in the extent of technological integration when grouped according to employees and guest profile.
3. There is no significant difference in the extent of service quality when grouped according to hotel guest profile.
4. There is no significant relationship between the extent of green adoption practices and technological integration?
5. There is no significant relationship among the green adoption practices and technological integration as drivers to service quality in selected hotels in Bacolod City?

FRAMEWORK

This study is anchored on three foundational theories. ISO 21401 provides the structured framework for green adoption, defining systematic environmental management practices (Iso, 2018). The DEAC model

assesses technological integration through its core dimensions: Detection, Engagement, Agility and Continuity (DEAC FRAMEWORK, 2018). Finally, the SERVQUAL theory operationalizes service quality, measuring it via five key dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy (Ombrete Lauga et al., 2024). The research posits that the strategic implementation of the first two constructs serves as a critical driver for enhancing the third, ultimately improving hotel service performance in Bacolod City.

ISO 21401 (Green Practices)

Green adoption practices are commonly understood through three interrelated pillars: environmental, social, and economic factors (Nogueira et al., 2023).

Environmental factors focus on minimizing ecological impacts through initiatives such as improving energy efficiency, conserving natural resources, managing water consumption, and ensuring proper handling of hazardous substances.

Social factors emphasize the human and societal dimension, including engagement with local communities, promotion of fair work and income opportunities, preservation of cultural values, and support for health and education.

Economic factors relate to the financial sustainability and organizational performance of hospitality establishments, including maintaining economic viability, enhancing service quality and guest satisfaction, and ensuring the health and safety of both guests and employees.

These three pillars operate in an integrated and mutually reinforcing manner rather than functioning independently. For instance, implementing energy conservation measures not only reduces environmental impact but also lowers operational costs, thereby strengthening economic performance. Similarly, active involvement in community development and socially responsible initiatives can improve organizational reputation, enhance guest satisfaction, and contribute to long-term competitiveness. Together, the environmental, social, and economic dimensions form a comprehensive framework that supports sustainable and responsible hospitality management (Dedat & Rodrigues, 2025).

DEAC (Technological Integration)

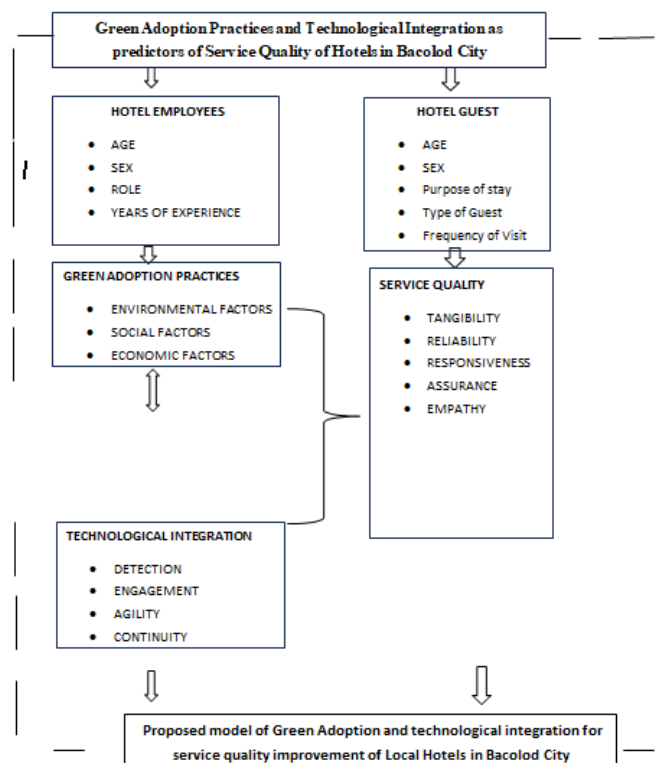
The DEAC (Detection, Engagement, Agility and Continuity) framework offers a continuous and self-reinforcing cycle for navigating digital transformation, grounded in the core pillars of Leadership, Change Management, Capabilities, and Innovation (DEAC FRAMEWORK, 2018). The process is initiated with the Detection phase, where an organization actively senses and identifies the need for change (Faro, 2020). This awareness then moves into Engagement a stage focused on building a clear vision and assembling a committed team to champion the transformation (Pham Minh & Pham Thi Thanh, 2023). From there, the cycle proceeds to Agility, which empowers the organization to implement plans and adapt dynamically to emerging challenges and opportunities (Zhang et al., 2023). Finally, the Continuity phase ensures the process is not a one-time event but an enduring practice, constantly scanning for new technologies to integrate. This cyclical flow builds upon itself, ultimately leading to Sustainability, where wins are consolidated and the organization's digital competence is continuously renewed (Kuo & Lai, 2019).

SERVQUAL (Service Quality)

The SERVQUAL model provides a foundational framework for understanding and measuring service quality, identifying five distinct dimensions that customers use to evaluate a service experience (Keneni & Mabhungu, 2025). The first dimension, Tangibility, refers to the physical evidence of the service, including facilities, equipment, and the appearance of personnel. Reliability captures the organization's ability to deliver the promised service dependably and accurately, forming the bedrock of trust. Responsiveness reflects the willingness to help customers and provide prompt, timely service, demonstrating attentiveness to their needs. Assurance encompasses the knowledge and courtesy of employees, as well as their capacity to

inspire trust and confidence through their interactions. Finally, Empathy represents the provision of caring, individualized attention, making customers feel valued and understood. According to the model, the overall level of service quality is ultimately determined by the gap that exists between customer expectations and their actual perceptions across these five critical areas (Karume et al., 2025).

Figure 1 Schematic Diagram



The schematic diagram is suggesting a research model on how Green Adoption Practices and Technological Integration are the major drivers in improving the Service Quality of hotels in Bacolod City, Negros Occidental. The model distinguishes two main groups of stakeholders, whose characteristics fall under the framework: Hotel Guests and Hotel Employees. Guest profiles such as age, sex, purpose of stay, type of guest and frequency of visit are potential factors that may influence on the perception and delivery of service quality. The attributes of employees, such as age, sex, role and years of experience are also included, indicating that staff demographics and expertise can influence the effectiveness of the green initiatives and technology implementation and ultimately impact the guest experience.

The model is built on three core constructs. Service Quality is assessed in five established dimensions: Tangibility, Reliability, Responsiveness, Assurance and Empathy. Environmental, Social and Economic. These are the three categories of Green Adoption Practices; this means a holistic approach to sustainability. The operational capabilities of Technological Integration are identified as Detection, Engagement, Agility, and Continuity. The model has Green Adoption Practices and Technological Integration as independent variables that have a positive impact on the dependent variable Service Quality. Moreover, it is envisaged that characteristics of the guests and employees constitute moderating or mediating factors within these relationships, which adds depth to the way these predict operate in practice.

In conclusion, the figure shows that Bacolod City hotels can improve their service quality significantly by strategically adopting sustainable practices and integrating technology effectively by considering the unique profile of their guests and employees. This conceptual framework is intended to guide empirical inquiry and provide a structured approach to data collection and analysis to confirm these linkages and guide hotel management strategies.

Scope of the Study

The study aimed to investigate the impact of Green Adoption Practices and Technological Integration as significant factors affecting Service Quality in the hotel industry in Bacolod City, Negros Occidental. More specifically, it aims to understand to which extent environmentally sustainable practices and the implementation of modern technologies in hotel operations contribute to the perceived service quality experienced by the hotel guests.

The study was conducted in four (4) selected local hotels which are accredited by the Department of Tourism (DOT) in Bacolod City, Negros Occidental, namely: Hotel A, Hotel B, Hotel C and Hotel D. The selected hotels were selected for their compliance with the national tourism standards and active participation in the local hospitality industry, thus providing suitable contexts for studying the constructs of sustainability, technology adoption, and service quality.

The data collection was conducted after the approval of the thesis proposal and was completed within the approved research timeline set by the graduate school. The study will take the time needed to administer survey instruments, retrieve responses, and validate the data collected.

The study respondents were categorized according to the study variables. The respondents for the variables Green Adoption Practices and Technological Integration will be hotel managers, supervisors, team leaders and rank and file staff since they are directly involved in the implementation and operationalization of sustainability initiatives and technological systems within the hotels. For the variable Service Quality the respondents will be hotel guests, both local and foreign, as they are the primary recipients and evaluators of hotel services.

The study was quantitative in nature and structured survey questionnaires will be the main tool for data collection. Separate but related questionnaires will be used for hotel personnel and hotel guests, to ensure that each variable is measured from the most appropriate perspective. The collected data will be statistically analyzed using suitable descriptive and inferential statistical tools to determine the relationships and impact of Green Adoption Practices and Technological Integration on Service Quality.

Significance of the Study

The findings of this study may be useful to various stakeholders in the hospitality and tourism industry, particularly those engaged in hotel management, policy making, service provision and academic research.

Hotel Top Management

The findings of this study may offer useful insights to hotel top management on how green adoption practices and technological integration may affect the overall service quality. This can help them to make strategic decisions, allocate resources and formulate policies to improve operational efficiency, sustainability performance and guest satisfaction.

Hotel Supervisors and Team Leaders

The findings may also be of benefit to hotel supervisors and team leaders as they may guide them to align daily operational practices with sustainability initiatives and technological systems. The study can help them improve supervision, staff coordination and standards of service delivery that support better quality of services.

Hotel Employees

Hotel employees may gain a better understanding of how their engagement in green practices and the use of technology can contribute to service quality outcomes. The findings may foster increased awareness, compliance, and engagement in sustainable and technology-driven practices in the workplace.

Local Government Unit (LGU) of Bacolod City

The findings of this study can be used by the Bacolod City LGU as a basis for the development or improvement of local tourism, sustainability and digitalization policies. The findings could support evidence-based programs that promote environmentally friendly and technologically advanced hospitality operations in the city.

Hotel Guests

The study's results may lead to improved service quality, enhanced guest experiences, and more sustainable hotel practices, which could benefit hotel guests. The findings may further enhance guest awareness about the role of sustainability and technology in shaping service delivery.

Researcher

This study may be useful to the researcher as it may add empirical evidence to the existing body of knowledge on green adoption practices, technological integration and service quality in the hospitality industry, particularly in a local Philippine context.

Future Researcher

The results of this study can serve as a reference for future researchers for related research, model development or comparison studies. The findings can serve as a basis for future research looking at other variables, contexts, or methodological approaches in hospitality and service quality research.

Definition of Terms

The following words are defined operationally to clarify specific points and to provide the understanding in case of difficulties in the study.

Green Adoption Practices

Hotel programs that combine ecological responsibility, social equity and financial profitability.

Environmental Factors

The environmental initiatives that hotels are taking to reduce their environmental impact, conserve resources, reduce waste and promote environmental responsibility.

Social Factors

The contribution of hotels in practicing sustainability for the benefit of employee welfare, guest satisfaction, community development, social responsibility and overall well-being.

Economic Factors

Financial advantages and results obtained from sustainable behaviors, such as cost savings, efficiency improvements, profitability and long-term revenue growth.

Technological Integration

The strategic use of digital tools to enhance hotel operations and guest experience.

Detection

The effective use of technological tools and systems to identify guest needs, recognize opportunities, monitor conditions and detect potential risks or threats.

Engagement

The use of digital platforms and technologies to communicate, engage and maintain meaningful connections with guests throughout their service journey.

Agility

The ability of an organization or technology system to efficiently adapt, modify, and improve processes, innovations, and digital solutions in response to changing demands.

Continuity

The capability of technological systems to deliver consistent service even in the face of changes or disturbances through the ability of the systems to maintain uniform, dependable, and uninterrupted operations.

SERVQUAL

A framework for measuring the gap between customer service expectations and perceptions .

Tangibility

The tangible elements of a hotel including facilities, equipment, employees' appearance and communication materials that influence the guests' perceptions of the service quality.

Reliability

The hotel's consistent capability to perform the promised service accurately, dependably, and efficiently, while meeting guest expectations and quality standards.

Responsiveness

The willingness and readiness of hotel staff to promptly assist guests, resolve concerns efficiently and provide timely, quality services.

Assurance

Employees' ability to demonstrate competence, professionalism and courteous behavior that generates trust, confidence and a sense of security among customers.

Empathy

The staff of hotels' ability to provide personalized, compassionate, and attentive services that understand and address guests' unique needs.

METHODOLOGY

This chapter discussed the research methodology used to systematically study the effects of green adoption practices and technological integration to the service quality of selected hotels in Bacolod City, Negros Occidental. The research design was quantitative descriptive-comparative and correlational. This design enabled the researcher to assess the current level of green adoption practices, technological integration and service quality; compare the responses of the selected hotels and find out the relationships between the study variables without manipulation. The quantitative approach was appropriate for this study because it enables objective measurement, statistical analysis, and hypothesis testing, thereby ensuring reliable and generalizable findings.

This chapter also contained the locale of the study, sources of data, sampling techniques, research instrument, validity and reliability procedure, data gathering procedure, ethical consideration, and statistical treatment of data. Each methodological aspect is carefully chosen to ensure that the data collected are accurate, reliable, and suitable for determining whether green adoption practices and technological integration significantly affect service quality. The research is designed to fulfill the research objectives and examine the hypotheses using the descriptive, comparative, and correlational methods that offer a structured and systematic approach to the collection, analysis, and interpretation of empirical evidence.

Research Design

This study used descriptive – comparative – correlational research design. This design was suitable because the researcher can systematically describe the current status of green adoption practices, technological integration, and service quality of hotel personnel and guests, compare the differences between groups of respondents, and examine the statistical relationships among these variables without experimental manipulation. The descriptive part gave a detailed snapshot on how green practices and integration of technology are implemented in the selected hotels, and the levels of service quality perceived by the guests and personnel. Descriptive research seeks to “accurately and systematically describe a population, situation or phenomenon” and is suitable for research problems in which variables are measured as they naturally occur without manipulation.

The comparative element was used to test for statistically significant differences in the adoption practices and technological integration across subgroups (e.g., managers vs. supervisors vs. staff, or across different hotel categories). This is in line with well-established uses of descriptive-comparative design to find differences between groups based on key criteria. The correlational part of the design explored the extent and direction of relationships among the main variables of the study - green adoption practices, technological integration, and perceived service quality - particularly between hotel practices (as reported by hotel personnel) and guest evaluations (as reported by guests). A correlational research design is used when a researcher is trying to find out the relationship between variables and how a change in one variable relates to changes in another variable, without inferring causality.

Sources of Data

Primary data were collected from four (4) selected local hotels accredited by the Department of Tourism (DOT) in Bacolod City, Negros Occidental, namely Hotel A, Hotel B, Hotel C and Hotel D. Data on Green Adoption Practices, Technological Integration and Service Quality would be collected through Structured survey questionnaires as per the objectives of the study.

Respondent Groups and Population

Classification of the respondents of the study according to the variables studied. The respondents for the variables Green Adoption Practices and Technological Integration were the hotel personnel and the respondents for the Service Quality variable was the hotel guests. The hotel personnel was further classified into managers, supervisors, team leaders and staff to allow a more detailed analysis of responses across levels of the organization. The sample size for each group was calculated based on Raosoft Sample Size Calculator with 95% confidence level and 5% margin of error. The sample size was divided among the different categories of hotel personnel, using proportional allocation.

Table 1 Population and Sample Size of Respondents

Sampling Techniques

Respondent Group	Total Population (N)	Sample Size (n)
Hotel Managers	20	14
Hotel Supervisors	40	28
Team Leaders	33	23

Hotel Staff	80	55
Subtotal (Hotel Personnel)	173	120
Hotel Guests	377	191
Subtotal (Hotel Guests)	377	
Grand Total	550	311

The study used stratified sampling and quota sampling, depending on the respondent group and research variable.

Stratified Sampling

The hotel personnel respondents were selected through stratified sampling method. The population was divided into strata based on their job position – managers, supervisors, team leaders and staff. The number of proportionate samples from each stratum was determined to ensure the fair representation of all organizational levels involved in green adoption practices and technological integration.

Quota Sampling

Quota sampling was used for hotel guests for the Service Quality variable. Separate quotas were set for local and foreign guests to ensure equitable representation. Respondents were selected on availability during the data collection period until the required quota for each group was met.

Data Gathering Instruments

The main instrument used for this study was a questionnaire which was adapted and modified. The questionnaire was used as the main instrument in gathering data and to obtain information from the hotel personnel and hotel guests of the DOT-accredited hotels in Bacolod City, Negros Occidental. The questionnaires were developed to measure the key variables of the study, which are Green Adoption Practices, Technological Integration and Service Quality as per the objectives of the study. The questionnaires were validated by experts in hospitality management, research methodology, and statistics to ensure that the items included in the instrument are clear, relevant, and appropriate, before the actual administration of the survey instruments.

The study used two (2) sets of questionnaires to be answered by hotel personnel and hotel guests to get the views from both service providers and service recipients. Responses from these two groups allowed the researcher to investigate if the level of implementation of green practices and technological integration in hotels corresponds with or influences the expectations and perceptions of hotel guests, and to identify if the service quality delivered by the hotel is in line with the service quality expected by guests.

The first set of questionnaires dealt with Green Adoption Practices and Technological Integration. The instrument was made up of two major sections. The first section collects the profile of the respondents. For hotel staff, the profile includes such items as age, sex, position or role in the hotel, years of experience, and highest educational attainment. For hotel guests, the profile includes age, sex, purpose of stay, type of guest (local or foreign) and frequency of visit. The information gathered in this section will be used to describe the characteristics of the respondents and to support comparative analysis where appropriate.

The second section was a structured Likert scale format that measures the extent of implementation of Green Adoption Practices and Technological Integration. Green Adoption Practices are evaluated using three dimensions: environmental, social, and economic factors. The environmental dimension includes energy conservation, waste management, water efficiency, and environmental protection initiatives. The social dimension deals with the well-being of employees, community involvement, ethical labor practices and corporate social responsibility activities. The economic dimension includes cost efficiency, sustainable sourcing, and the long-term financial benefits of green practices.

Technological Integration is operationalized through four dimensions namely detection, engagement, agility

and continuity The detection dimension relates to the use of technology to monitor operations, gather data, and track performance. Engagement centers on technologies that enable employee coordination and boost interaction with guests. Agility is the hotel's ability to respond and adapt quickly to changes in operations and market by technological tools. Continuity means the ability to sustain, depend upon and integrate technology systems over the long term within hotel operations. The second set of questionnaires measured the variable of Service Quality and were answered by both hotel personnel and hotel guests so that the level of service quality implemented by the hotel and the level of service quality perceived and expected by guests can be compared. Like the first instrument, this questionnaire is also divided into two sections: respondent profile and service quality assessment.

The service quality assessment was measured in a structured Likert-scale format adapted and modified from existing hospitality service quality measurement models. The service quality was measured by five dimensions; tangibility, reliability, responsiveness, assurance and empathy. Tangibility The tangibility dimension of service quality refers to the physical facilities, equipment, appearance of personnel and overall visual appeal of the hotel. Reliability is the hotel's ability to perform the promised services dependably and accurately. Responsiveness means that employees are quick and willing to help guests and answer their needs. Assurance is the knowledge, professionalism, courtesy and competence of the hotel staff to build trust and confidence among the guests. Empathy is defined as the level of personal attention, care, and understanding offered to guests during their stay.

In general, the use of two sets of complementary questionnaires answered by both hotel personnel and hotel guests allows the study to examine the alignment between hotel operational practices and guest expectations. This approach will allow the researcher to determine if the implementation of green adoption practices and technological integration affects guest expectations and if the service quality provided by hotels matches the level of service quality perceived by guests, thus enhancing the validity and reliability of the data collected in this research.

Validity of the Research Instrument

The validity of the research instrument: The research instruments were validated content-wise, with Lawshe's Content Validity Ratio (CVR) method to establish the content validity of the research instruments. Content validity is the degree to which the items of a questionnaire represent the construct they are intended to measure and is considered a key step in validating measurement instruments prior to full data collection. The Content Validity Ratio (CVR) is a measure of the extent to which certain items in an instrument are rated as "essential" by a panel of subject matter experts, thus indicating the extent to which each item meaningfully contributes to the construct measured (Lawshe, 1975). A panel of fifteen (15) experts with a minimum of a master's or doctorate degree in disciplines pertinent to hospitality management, research methodology, sustainability practices, and technology integration were invited

to assess the content of the research instruments. The experts included university faculty, industry researchers, post-graduate practitioners, and scale development specialists. Each expert was given the draft questionnaires and asked to evaluate each item on a 4 Point Likert Scale: (1) Strongly Disagree, (2) Disagree, (3) Agree and (4) Strongly Agree. After CVR for each item was calculated and reviewed, the Content Validity Index (CVI) of the instrument was obtained by averaging the CVR values of retained items. The overall Content Validity Index (CVI) obtained for the research instrument was 0.847, indicating that the questionnaire items possess a high level of content validity and are considered relevant and essential by the panel of experts. This provides an overall index of the instrument's content validity and reflects the degree to which the questionnaire's content is judged to be relevant and essential by the expert panel. This multi-expert approach enabled the researcher to ensure that the instrument covers all relevant dimensions of Green Adoption Practices, Technological Integration, and Service Quality, and is in line with accepted standards of content validity prior to actual data collection.

The study's application of the Lawshe CVR method, coupled with a substantial pool of expert validators, bolsters the robustness of its measurement instruments, boosts confidence in the quality of the forthcoming data, and conforms to conventional approaches in quantitative research for validating instruments. The

obtained CVI value of 0.847 further confirms that the research instrument demonstrates satisfactory content validity and is suitable for actual data collection.

Reliability of the Research Instrument

To establish the reliability and consistency of the research instruments, this study employed Cronbach's Alpha to measure internal consistency reliability. Reliability refers to the ability of an instrument to produce stable and consistent results, while internal consistency determines whether the items within each construct effectively measure the same underlying concept. A pilot test involving thirty (30) respondents composed of hotel personnel and hotel guests who were not included in the final study sample was conducted. These participants were selected from hotels with characteristics similar to those included in the main study to ensure that the pilot results were representative of the target population.

During the pilot testing, respondents completed two sets of questionnaires under conditions similar to the actual data gathering process. The collected responses were encoded and analyzed using statistical software to determine the Cronbach's Alpha values for each construct and dimension of the instruments. The first questionnaire assessed the reliability of Green Adoption Practices, covering environmental, social, and economic dimensions, and Technological Integration, which included detection, engagement, agility, and continuity dimensions. The second questionnaire evaluated Service Quality based on its dimensions of tangibility, reliability, responsiveness, assurance, and empathy.

The acceptable level of Cronbach's Alpha was set at 0.70 or higher, following established standards in social science research, indicating that the items within each construct have satisfactory internal consistency. Items with reliability values below the acceptable threshold were subject to revision or removal to improve the quality of the instrument. Through pilot testing and reliability analysis, the study ensured that the research instruments were capable of generating dependable and consistent data, thereby strengthening the credibility of the findings and supporting subsequent analyses on the relationships among Green Adoption Practices, Technological Integration, and Service Quality.

Data Gathering Procedure

Prior to the conduct of the study, the researcher obtained approval of the thesis proposal from the graduate school. Upon approval, formal letters requesting permission to conduct the study were prepared and submitted to the management of the four (4) DOT-accredited hotels in Bacolod City, Negros Occidental. These letters outlined the objectives of the study, the nature of the respondents, the information to be gathered, and the assurance that participation would be voluntary and all responses would be treated with strict confidentiality. Necessary endorsements from the thesis adviser and other academic authorities were also secured. Furthermore, the research instruments underwent content validation by experts in hospitality management, research, and statistics to ensure their clarity, relevance, and alignment with the objectives of the study. A pilot test was also conducted to further assess the reliability and appropriateness of the questionnaires before their actual administration.

After obtaining the required approvals and permissions, the researcher coordinated with the hotel management regarding the appropriate schedule and procedure for distributing the questionnaires to prevent interruption of hotel operations. The adapted and modified questionnaires were personally administered by the researcher or authorized representatives to the selected hotel personnel and hotel guests based on the established sampling procedures. Before answering the questionnaires, respondents were informed about the purpose of the study, their right to decline or withdraw their participation at any stage, and the voluntary nature of their involvement. They were likewise assured that their identities would remain anonymous and that the collected information would be used solely for academic and research purposes. Completed questionnaires were collected immediately after completion or at a mutually agreed schedule. All accomplished questionnaires were safely stored in secured envelopes or locked containers, while encoded electronic data were protected through password-secured devices and encrypted digital storage to maintain confidentiality and prevent unauthorized access.

Upon completion of the data gathering process, all retrieved questionnaires were carefully reviewed to ensure completeness and accuracy before proceeding to data coding, tabulation, and statistical analysis. The collected data were analyzed using appropriate statistical techniques consistent with the descriptive-comparative and correlational research design of the study. To maintain ethical standards and protect the privacy of the respondents, all hard copies of the questionnaires were securely stored and would be disposed of through proper shredding, while electronic records would be permanently deleted from all storage devices after the required retention period. The research data would be maintained confidentially for one (1) year following the completion and approval of the final manuscript, in accordance with graduate school policies and research ethics guidelines, after which all records will be securely destroyed.

Ethical Considerations

This study was conducted in accordance with the principles of research ethics to ensure the protection of the rights, welfare and dignity of all the participants during the process of research. The study has been designed to maximize social value and to protect the privacy of respondents and respect their autonomy in accordance with internationally accepted guidelines on research ethics. The study ensured that respondents are protected against coercion, employer influence and the feeling of being obliged to participate by stressing voluntary participation, informed consent and the right to withdraw at any time without negative consequences. All responses will be confidential and used solely for academic research purposes.

Social Value

The study aimed to contribute knowledge on how Green Adoption Practices and Technological Integration may affect the Service Quality of hotels in Bacolod City. The findings may provide significant learnings to hotel management, employees, local government units, and the hospitality industry in general. It also aims to add to the social and economic development of the local community and the tourism sector by identifying strategies that would improve service quality, along with the promotion of sustainability and technological efficiency.

Confidentiality

All respondents' confidentiality were strictly maintained. Personal identifiers (name) will be optional and only used for administrative purposes if collected. All completed questionnaires were stored securely in locked cabinets or password protected digital devices only accessible to the researcher. To prevent identification of specific participants individual responses were anonymised at the reporting stage and data will be presented in aggregate form.

Voluntary Participation

Respondents' participation in the study were completely voluntary. Respondents were advised that they may refrain from answering any question or taking part in the research if they do not wish to. There were no incentives or pressures to influence participation, and respondents will be assured that their decision to participate or not will have no consequences on their employment, service access or relationship with the hotel.

Right to Withdraw

Participants were free to withdraw from the study at any time without having to give a reason. Participants who decided to withdraw will have their responses deleted from the data set and destroyed upon request. Thus, the participants can control their participation and data without any negative repercussions.

Respondents' Vulnerability

Acknowledging that some respondents could be considered vulnerable, in particular hotel staff who may feel pressured to participate due to their employment status. To address this, the researcher clearly stated that

participation is voluntary, responses are confidential and that hotel management do not have access to individual responses. The researcher made sure that respondents' participation did not interfere with hotel guests' stay or comfort and that they may opt out at any stage without affecting their experience. In applying such ethical safeguards, this study sought to promote responsible, respectful and socially valuable research that protects the rights and well-being of participants and generates reliable and meaningful findings.

Statistical Treatment of Data

For problems 1-3 the extent/level of the variables were described using Mean and Standard Deviation.

For problem 4-6, T-test (for two groups e.g. sex) and Mann-Whitney U test (if data is not normally distributed) were used to compare groups. More than two groups: ANOVA or its non-parametric equivalent (Kruskal-Wallis). 7. Pearson R Correlation if parametric test while Spearman's Rho if non-parametric test to find the relationship between the green practices, and technological integration. For problem number 8, Pearson R Correlation were used if parametric test while Spearman's Rho if no ' parametric test to determine relationship among green adoption practices and technological integration as drivers to service qualities.

METHODOLOGICAL LIMITATIONS

The personnel and guest samples represented different individuals and were not paired. Accordingly, personnel perceptions cannot be directly linked to an individual guest's service-quality rating. The regression avoided this ecological mismatch by using only guest records containing all three constructs. However, because the guest predictors and outcome were collected through the same questionnaire, the estimates may be affected by common-method variance and shared response tendencies.

Respondents were also clustered within only four hotels, while the reported regression treated individual guest records as the analytical observations. The small number of hotels did not support a reliable hotel-level or multilevel analysis. The cross-sectional and nonexperimental design therefore limits causal inference and generalization beyond the participating establishments. Future research should use larger hotel samples, independently sourced operational indicators, matched or appropriately aggregated multilevel data, temporal separation of measures, and complete reporting of regression diagnostics.

RESULTS AND DISCUSSION

In this chapter, the findings of the collected data and the analysis and interpretation thereof with respect to the objectives of the study have been discussed. The results were systematically discussed to find the level of Green Adoption Practices, Technological Integration, and Services Quality among Bacolod City, Negros Occidental hotels. Additionally, the chapter looks at the significant differences based on the demographic profiles of the respondents, the interrelationships among the study variables and the predictive power of Green Adoption Practices and Technological Integration on Service Quality. The interpretations of the results are supported by relevant literature and previous studies to give the comprehensive understanding of the research findings.

Table 1 Extent of Green Adoption Practices in terms of Environmental factors when grouped according to the Employees Demographic Profile

Grouping Variable	Category	SD	Mean	Interpretation
Age	20–29 years old	0.367	3.42	Very High Extent
	30–39 years old	0.387	3.25	High Extent
	40 years old and above	0.384	3.15	High Extent
Sex	Male	0.370	3.39	Very High Extent
	Female	0.400	3.26	Very High Extent
Position	Staff	0.356	3.39	Very High Extent
	Team Leader	0.435	3.39	Very High Extent

	Supervisor	0.312	3.04	High Extent
	Manager	.	3.53	High Extent
Years in Service	5 years and below	0.367	3.40	Very High Extent
	6–10 years	0.402	3.31	Very High Extent
	11 years and above	0.336	3.08	High Extent
Educational Attainment	Bachelor Degree	0.387	3.32	High Extent
	High School Diploma	0.075	3.68	Very High Extent
Hotel Checked-in	Hotel A	0.339	3.41	Very High Extent
	Hotel B	0.383	3.37	Very High Extent
	Hotel C	0.449	3.24	High Extent
	Hotel D	0.359	3.33	Very High Extent
Overall	—	0.386	3.34	Very High Extent

Table 1 shows the level of green adoption practices in terms of environmental factors according to the classification of respondents in the demographic profile. Overall, the respondents were Very High Extent in the green adoption practices with a grand mean of 3.34 (SD = .386). Among the age groups, employees aged 20-29 years obtained the highest mean (M=3.42), while those aged 40 years and above registered the lowest mean (M=3.15). Both however remained within the High to Very High Extent categories. The mean was slightly higher for male respondents (M = 3.39) than for female respondents (M = 3.26) in terms of sex, both of which were interpreted as Very High Extent. For position, managers had the highest mean score (M = 3.53) indicating stronger environmental adoption practices, while supervisors had the lowest mean (M = 3.04), which was interpreted as High Extent. The highest mean (M = 3.40) was reported by employees with less than five years of service and the lowest mean (M = 3.08) was reported by employees with 11 years and above in terms of years in service. Educational attainment indicated that high school diploma holders obtained the highest mean (M = 3.68) while those who earned bachelor's degrees had a mean of 3.32. The mean for the accommodation establishments ranged from a high of 3.41 (Hotel A) to a low of 3.24 (Hotel C).

The results show that environmental sustainability practices are already well entrenched in the participating accommodation establishments. The high scores across demographic groups suggest that employees in general are aware of and support environmentally responsible practices such as waste reduction, energy conservation and resource efficiency. The higher scores among younger employees, managers and personnel with less years of service may reflect greater exposure to contemporary sustainability initiatives and environmental awareness programs. Meanwhile, the relatively lower scores of older employees, supervisors, and long-tenured employees suggest opportunities for targeted sustainability training and ongoing environmental education. These findings imply that organizations have embedded green initiatives into their processes, but sustained employee engagement among all demographic groups remains imperative to maintain environmental performance and achieve broader sustainability goals.

The findings are in line with the recent hospitality sustainability literature that shows the increasing integration of environmental practices in hotel operations. A review by Makoondlall-Chadee and Bokhoree (2024) found that hotels are increasingly adopting sustainability assessment tools and environmental management practices for the purpose of improving operational effectiveness and environmental performance. In the same vein, Popşa, (2023) identified that hotels globally are including energy-saving technologies, recycling initiatives, and eco-friendly services in their strategic priorities. In a study in the hospitality sector, Abdelghani et al., (2025) found that environmental management practices lead to environmental protection and operational efficiency and longterm sustainability outcomes. Moreover, sustainability has been recognized as a common and increasing theme in hospitality research Sahu and Haider, (2026), reflecting the growing significance of environmental responsibility to hotel stakeholders. These findings collectively support the present findings that the implementation of environmental adoption practices by accommodation employees is at a high to very high level within accommodation establishments.

Table 2 Extent of Green Adoption Practices in terms of social factor when grouped according to the Employees Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	20 – 29 years old	0.465	3.61	Very High Extent
	30 – 39 years old	0.486	3.43	Very High Extent
	40 years old and above			Very High Extent
		0.505	3.29	
Sex	Male	0.465	3.59	Very High Extent
	Female	0.500	3.40	Very High Extent
Position	Staff	0.466	3.58	Very High Extent
	Team Leader	0.519	3.15	High Extent
	Supervisor	0.292	3.66	Very High Extent
	Manager	.	3.72	Very High Extent
Years in Service	5 years and below	0.450	3.58	Very High Extent
	6 – 10 years	0.537	3.49	Very High Extent
	11 years and above	0.474	3.26	Very High Extent
Educational Attainment	Bachelor Degree	0.486	3.50	Very High Extent
	High School Diploma	0.000	4.00	Very High Extent
Hotel Checked-in	Hotel A	0.346	3.69	Very High Extent
	Hotel B	0.497	3.54	Very High Extent
	Hotel C	0.548	3.36	Very High Extent
	Hotel D	0.481	3.51	Very High Extent
Overall		0.486	3.52	Very High Extent

Table 2 shows the level of green adoption practices in relation to social factors according to the demographic profile of the employees. The overall mean of 3.52 (SD = .486) indicates a Very High Extent of implementation in the participating hotels. Among demographic groups, respondents with high school diploma had the highest mean score (M = 4.00), followed by managers (M = 3.72), Circle Inn employees (M = 3.69), and supervisors (M=3.66), with a very strong perception of socially responsible practices. Conversely, the average score for team leaders was the lowest (M = 3.15) although it still was considered to be a High Extent. Regarding age, the highest level of social green adoption was reported by employees aged 20–29 years (M = 3.61) and the lowest mean level was by those aged 40 years and above (M = 3.29). Still, all groups perceived the implementation of social sustainability initiatives in general at a high to very high level.

The findings suggest that the social aspects of sustainability like employee welfare, community engagement, ethical conduct, inclusivity and stakeholder engagement are deeply ingrained in hotel operations. High ratings in all demographic categories demonstrate that employees see the organization's commitment to creating a socially responsible workplace and positive relationships with guests and communities. Higher ratings by younger workers and managerial personnel may imply more awareness of and participation in the social responsibility programs at the organization. At the same time, the relatively low assessment of team leaders could imply the need to increase their involvement in the planning and implementation of social sustainability initiatives. Enhancing communication, employee involvement and leadership support could further empower these socially responsible practices at all levels of the organization.

The findings are consistent with recent studies indicating the increasing importance of social sustainability in the hospitality sector. Oh et al. (2021) found socially responsible practices in hotels to have a positive effect on employee commitment and organizational reputation, underscoring the importance of ethical and community-based practices. Likewise, Wang et al. (2025) found that hospitality organizations that invest in employee wellbeing and stakeholder engagement achieve stronger sustainability outcomes and organizational performance. Ma et al. (2024) further stressed that social sustainability initiatives promote employee satisfaction and longterm organizational resilience. Besides, Mu et al. (2024) found that social

responsibility practices promote relationships between the hospitality organizations and their stakeholders, enhancing sustainable business performance. The studies support the current findings that social green adoption practices are highly perceptible and valued among employees of the hotels involved.

Table 3 Extent of Green Adoption Practices in terms of Economic factor when grouped according to the Employees Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	20 – 29 years old	0.451	3.61	Very High Extent
	30 – 39 years old	0.468	3.36	Very High Extent
	40 years old and above			Very High Extent
		0.482	3.43	
Sex	Male	0.438	3.59	Very High Extent
	Female	0.499	3.39	Very High Extent
	Staff	0.468	3.57	Very High Extent
Position	Team Leader	0.448	3.23	High Extent
	Supervisor	0.388	3.59	Very High Extent
	Manager	.	3.87	Very High Extent
Years in Service	5 years and below	0.465	3.56	Very High Extent
	6 – 10 years	0.485	3.51	Very High Extent
	11 years and above	0.466	3.36	Very High Extent
Educational Attainment	Bachelor Degree	0.471	3.50	Very High Extent
	High School Diploma	0.000	4.00	Very High Extent
Hotel Checked- in	Hotel A	0.353	3.69	Very High Extent
	Hotel B	0.485	3.50	Very High Extent
	Hotel C	0.495	3.45	Very High Extent
	Hotel D	0.499	3.46	Very High Extent
Overall		0.471	3.52	Very High Extent

Table 3 presents the level of green adoption practices concerning economic factors according to the demographic profile of the employees. The overall mean of 3.52 (SD = .471) shows a Very High Extent of implementation among the participating hotels. Of the different demographic groups, employees with a high school diploma had the highest mean score (M = 4.00) followed by managers (M = 3.87) and employees from Circle Inn (M = 3.69) with a strong recognition of the economic benefits of green practices.

On the other hand, the lowest mean score was obtained from the team leaders (M = 3.23) which was interpreted as High Extent. In terms of age, employees in the 20 – 29 years age group had the highest mean (M = 3.61) while those in the 30 – 39 years age group had the lowest mean (M = 3.36). Notwithstanding these differences, the perception across all groups was generally of high to very high levels of practices of economic green adoption being implemented.

The findings show that hotel employees appreciate the economic benefits of sustainability initiatives in hotel operations. Employees seem to embrace and value green practices such as energy conservation, efficient use of resources, waste reduction, and environmental measures that save money. The steady high scores indicate that the respondents understand how sustainability contributes not only to environmental protection, but also to operational efficiency and long-term financial performance.

The exceptionally high ratings from managers might be due to their increased participation in decision-making processes and their knowledge of the financial benefits of green initiatives. The results suggest that sustainability has become an important element of business strategy and that employees generally see environmental responsibility as compatible with economic growth and organizational competitiveness.

The results are in line with recent studies that have pointed to the economic benefits of sustainability practices in the hospitality industry. Green management initiatives significantly improve operational efficiency and result in cost savings in hotel operations Orynych & Tucki, (2021). Similarly, Duric & Topler,

(2021) found that sustainability-oriented hotels tend to perform better financially due to efficient resource management and waste minimization strategies.

In a broader context of the hospitality industry, green practices are correlated with improved economic performance and more competitive organizations Maletič et al., (2015). Moreover, Le & Nguyen, (2025) emphasized that investments in sustainable operations generate long-term economic value by boosting efficiency, lowering operating costs, and strengthening overall business resilience. Further, the findings are supported by the previous studies that claim that employees perceive economic green adoption practices to be very apparent and beneficial within accommodation establishments.

Table 4 Extent of Technological Integration in terms of Detections of Hotels in Bacolod when grouped according to the Employees Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	20 – 29 years old	0.462	3.55	Very High Extent
	30 – 39 years old	0.416	3.43	Very High Extent
	40 years old and above	0.442	3.38	Very High Extent
Sex	Male	0.440	3.55	Very High Extent
	Female	0.451	3.41	Very High Extent
Position	Staff	0.456	3.52	Very High Extent
	Team Leader	0.421	3.25	High Extent
	Supervisor	0.253	3.67	Very High Extent
	Manager	.	3.80	Very High Extent
Years Service in	5 years and below	0.464	3.52	Very High Extent
	6 – 10 years	0.412	3.50	Very High Extent
	11 years and above	0.452	3.38	Very High Extent
Educational Attainment	Bachelor Degree	0.448	3.48	Very High Extent
	High School Diploma	0.230	3.86	Very High Extent
Hotel Checked-in	Hotel A	0.436	3.58	Very High Extent
	Hotel B	0.439	3.49	Very High Extent
	Hotel C	0.422	3.46	Very High Extent
	Hotel D	0.489	3.45	Very High Extent
Overall		0.465	3.50	Very High Extent

Table 4 presents the extent of technology integration in terms of detection of hotels in Bacolod City when grouped according to the demographic profile of the employees. The overall mean score of 3.50 (SD=.465) shows a Very High Extent of technological integration. Among the demographic groups, respondents with a high school diploma achieved the highest mean score (M = 3.86), followed by managers (M = 3.80) and supervisors (M = 3.67), indicating a strong perception of effectiveness of detection-related technologies in hotel operations. On the other hand, team leaders reported the lowest mean score (M = 3.25) which were interpreted as High Extent. Employees aged 20–29 years had the highest mean among age groups (M = 3.55) while employees aged 40 years and above had the lowest mean (M = 3.38). The mean score for Hotel A was the highest (M = 3.58) for all the accommodation establishments and Hotel D had the lowest mean (M = 3.45). Despite these differences, detection technologies were generally perceived to be deployed to a very high degree across all categories.

The results indicate that hotels have successfully integrated detection technologies in their operations for purposes of security, monitoring, operational control and service delivery. The consistent high ratings show that employees understand the importance of technology tools to flag problems, monitor hotel happenings and assist in efficient decision-making. Managers and supervisors rated higher probably because they are more exposed to technological systems for operational control and performance monitoring. On the other hand, the relatively low rating among the team leaders indicates that more training and involvement in technology-based processes might help them appreciate these systems better. The results show that technology

integration has become an important part of the hotel management, and it has a positive impact on operational efficiency and organizational competitiveness.

The present study's findings support the recent findings that the use of technology in hospitality operations is growing. Digital technologies improve operational monitoring, increase service efficiency, and help hotels make data-driven decisions Ivanov and Webster, (2021). In a similar vein, Mariani and Baggio (2022) found that the adoption of technology reinforces organizational capabilities due to the opportunity to collect information in real-time and control operations. According to Gursoy et al. (2023), hospitality organizations are more and more using smart technologies and digital systems to improve their efficiency, security, and the quality of customer service. Moreover, it was highlighted by Koo et al. (2024) that technology-enabled detection and monitoring systems are essential tools to ensure the enhancement of hotel performance and service standards in a highly competitive environment. The current findings are consistent with these studies that technological integration in terms of detection is very apparent and valued by hotel employees.

Table 5 Extent of Technological Integration in terms of Engagement when grouped according to the Employees demographic profile

Grouping Variables		SD	Mean	Interpretation
Age	20 – 29 years old	0.464	3.58	Very High Extent
	30 – 39 years old	0.449	3.42	Very High Extent
	40 years old and above	0.466	3.36	Very High Extent
Sex	Male	0.438	3.57	Very High Extent
	Female	0.491	3.40	Very High Extent
	Staff	0.470	3.55	Very High Extent
Position	Team Leader	0.392	3.22	High Extent
	Supervisor	0.376	3.61	Very High Extent
	Manager	.	3.90	Very High Extent
Years in Service	5 years and below	0.474	3.53	Very High Extent
	6 – 10 years	0.26	3.50	Very High Extent
	11 years and above	0.502	3.38	Very High Extent
Educational Attainment	Bachelor Degree	0.466	3.49	Very High Extent
	High School Diploma	0.288	3.83	Very High Extent
Hotel Checked-in	Hotel A	0.361	3.65	Very High Extent
	Hotel B	0.448	3.51	Very High Extent
	Hotel C	0.447	3.47	Very High Extent
	Hotel D	0.542	3.43	Very High Extent
Overall		0.465	3.51	Very High Extent

Table 5 shows the level of technological integration as engagement as classified by the demographic profile of the employees. The overall mean of 3.51 (SD = .465) denotes a Very High Extent of technological integration by the participating hotels. The highest mean score was M=3.90 by the managers, followed by the employees with a high school diploma (M=3.83), Circle Inn employees (M=3.65) and supervisors (M=3.61). This suggests that the role of technology in increasing employee engagement and interaction in the workplace is highly perceived. In contrast, the mean score of the team leaders was the lowest (M = 3.22), which was interpreted as High Extent. Age wise, the highest mean (M = 3.58) was for the age group of 20-29 years and the lowest mean (M = 3.36) was for the age group of 40 years and above. There were small differences between groups but all groups rated the extent of implementation of engagement related technological integration as very high. The findings suggest that technology is helping to enhance the communication, collaboration, participation and engagement in the hotel operations. The persistently high ratings imply that employees are cognizant of the worth of digital tools in enabling information sharing, enhancing connectivity at the workplace,

and increasing employee engagement in organizational activities. The very high ratings among managers may be due to greater exposure to digital platforms for coordination, performance monitoring and strategic communication. The relatively lower assessment among team leaders, meanwhile, suggests the need to further empower middle level personnel through technology-focused training and engagement initiatives. The findings in general reveal that the use of technology has become a substantial mechanism to foster employee participation and enhance organizational effectiveness in the hospitality industry.

These findings are supported by recent studies that have highlighted the role of technology in enhancing employee engagement and organizational performance. Digital technologies play an important role in improving communication, collaboration and participation of employees especially in service-oriented organisations Carillo et al. (2021). Similarly, Benitez et al. (2022) found that digital transformation initiatives strengthen employee engagement by improving access to information and facilitating workplace interaction. In the hospitality sector Buhalis & Moldavska (2023) noted that technology-enabled communication systems improve employee responsiveness, teamwork and operational efficiency. Moreover, Sigala (2024) stressed that digital engagement platforms allow for the creation of more connected and collaborative work environments that in turn foster increased employee engagement and organizational adaptability. These studies are in agreement with the present finding that the engagement related technological integration is highly visible among hotel employees and is an important contributor to organizational success.

Table 6 Extent of Technological Integration in terms of Agility when grouped according to the Employees Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	20 – 29 years old	0.477	3.54	Very High Extent
	30 – 39 years old	0.465	3.41	Very High Extent
	40 years old and above	0.491	3.37	Very High Extent
Sex	Male	0.450	3.53	Very High Extent
	Female	0.509	3.40	Very High Extent
	Staff	0.471	3.54	Very High Extent
Position	Team Leader	0.444	3.18	High Extent
	Supervisor	0.419	3.50	Very High Extent
	Manager	.	3.80	Very High Extent
Years in Service	5 years and below	0.490	3.48	Very High Extent
	6 – 10 years	0.417	3.52	Very High Extent
	11 years and above	0.539	3.39	Very High Extent
Educational Attainment	Bachelor Degree	0.478	3.47	Very High Extent
	High School Diploma	0.173	3.90	Very High Extent
	Hotel A	0.443	3.57	Very High Extent
Hotel Checked-in	Hotel B	0.456	3.49	Very High Extent
	Hotel C	0.490	3.43	Very High Extent
	Hotel D	0.514	3.46	Very High Extent
Overall		0.476	3.49	Very High Extent

In terms of agility, the degree of technological integration is shown in Table 6, classifying it on the basis of the demographic profile of the employees. The overall mean of 3.49 (SD = .476) indicates a Very High Extent of technological integration among the hotels involved. Among the demographic groups, employees with a high school diploma had the highest mean score (M = 3.90) followed by managers (M = 3.80) and employees from Circle Inn (M = 3.57) which suggests a positive perception of the organization's ability to respond quickly and adapt through technology. In contrast, team leaders had the lowest mean score (M = 3.18) which was interpreted as High Extent. Employees aged 20–29 years reported the highest mean (M = 3.54) whereas the lowest mean (M = 3.37) was reported by employees aged 40 years and above in terms of age. However, the technological integration associated with agility was generally seen to be implemented to

a very large extent among all demographic groups.

The results indicate the significant role of technology in enhancing the organizational agility in hotel operations. The high scores across the board indicate that employees view the technological tools and systems as enabling faster decision-making, greater flexibility, and more efficient responses to operational challenges and customer needs. Managers' very high ratings may be due to their direct involvement in using digital systems to plan the strategy and make operational adjustments. The lower score among team leaders may indicate opportunities to increase their involvement in technology-based activities and decision-making. Overall, the results indicate that the introduction of technology has resulted in a more agile and flexible working environment, enabling hotels to quickly respond to changing guest expectations and operational needs.

Our findings are consistent with recent studies that showed the link between technology adoption and organizational agility. Agility in organizations is enhanced by digital technologies that improve responsiveness, flexibility, and decision-making capabilities Queiroz et al. (2022). Likewise, Verhoef et al. (2021) revealed that digital transformation helps organizations to adapt to changing market conditions and customer expectations quickly by technology-driven processes. The adoption of technology in the hospitality industry enhances operational flexibility by enabling real-time information sharing and efficient resource management Centobelli et al. (2023). In addition, Alnuaimi et al. (2024) found that digital capabilities promote organizational resilience and agility through innovation and rapid adaptation to environmental changes. The findings of such studies support the current findings that the technological integration related to agility is very evident among hotel employees and contributes significantly to organizational responsiveness and operational effectiveness.

Table 7 Extent of Technological Integration in terms of Continuity when grouped according to the Employees demographic profile

Grouping Variables		SD	Mean	Interpretation
Age	20 – 29 years old	0.489	3.52	Very High Extent
	30 – 39 years old	0.479	3.33	Very High Extent
	40 years old and above	0.551	3.36	Very High Extent
Sex	Male	0.503	3.47	Very High Extent
	Female	0.489	3.39	Very High Extent
Position	Staff	0.485	3.51	Very High Extent
	Team Leader	0.449	3.12	High Extent
	Supervisor	0.502	3.50	Very High Extent
	Manager	.	3.80	Very High Extent
Years in Service	5 years and below	0.493	3.47	Very High Extent
	6 – 10 years	0.489	3.44	Very High Extent
	11 years and above	0.542	3.34	Very High Extent
Educational Attainment	Bachelor Degree	0.485	3.43	Very High Extent
	High School Diploma	0.000	4.00	Very High Extent
	Hotel A	0.486	3.57	Very High Extent
Hotel Checked-in	Hotel B	0.509	3.40	Very High Extent
	Hotel C	0.517	3.40	Very High Extent
	Hotel D	0.484	3.43	Very High Extent
Overall		0.498	3.44	Very High Extent

Table 7 shows the degree of technological integration in terms of continuity grouped by the demographic profile of the employees. The grand mean of 3.44 (SD = .498) indicates that the technological integration among the hotels that participated in the study is of very high extent. As per demographic groups, respondents with high school diploma got the highest mean score (M = 4.00), followed by managers (M =

3.80) and employees of Circle Inn ($M = 3.57$). The findings indicate that there is a strong perception that technology supports the continuity of the hotel operations and service delivery. On the other hand, team leaders had the lowest average score ($M=3.12$), which was interpreted as High Extent. Across age groups, employees in the 20–29 years age group obtained the highest mean ($M = 3.52$), while employees in the 30–39 years age group recorded the lowest mean ($M = 3.33$). However, despite these variations, technological integration regarding continuity was perceived to be implemented to a very high extent across all demographic groups.

The findings suggest that technology has become an important mechanism to ensure the uninterrupted functioning of hotels, consistent delivery of service, and organizational resilience. Strong scores across all demographics suggest that employees are aware that digital systems are key to maintaining day-to-day operations, information management and limiting operational down time. Managers are especially rated high, probably because of their greater participation in strategic planning and business continuity efforts. In contrast, the lower scores on team leaders may suggest that they need more experience with continuity management systems and technology-enabled operational planning. Overall, the results show that technology integration is very important for organizational stability and consistent delivery of quality services in the hospitality industry.

Recent literature suggests the importance of technology for business continuity and organizational resilience, which is in agreement with the present findings. According to Khan et al. (2022), digital technologies enhance business continuity by allowing organizations to keep their core operations running during disruptions and unexpected challenges. Similarly, Papadopoulos et al. (2021) demonstrated that technology-driven systems improve organizational resilience by enabling rapid recovery and operational stability during times of uncertainty. Yousaf et al. (2023) highlighted the significance of digital infrastructure and integrated information systems in the hospitality industry to ensure continuous service delivery and customer satisfaction. Liu and Yang (2024) also stressed that technology-enabled continuity strategies enhance organizational readiness, operational effectiveness, and long-term survival in service-based industries. Taken together, these studies are consistent with the present findings that continuity-related technological integration is strongly apparent among hotel employees and instrumental in sustaining operational effectiveness and organizational resilience.

Table 8 indicates the degree of green adoption practices in terms of environmental factors when classified according to the demographic profile of the guests. The overall mean score of 3.41 ($SD = .527$) indicates that the hotels involved in the study implement environmental green adoption to a Very High Extent. The highest mean score ($M = 3.53$) was recorded for the guests that were 30-39 years of age while the lowest mean ($M = 2.96$) was recorded for the guests that were 40 years and above. When sex was included, male guests had a slightly higher mean ($M = 3.43$) than female guests ($M = 3.39$). Regarding purpose of stay, work-related travelers reported the highest mean ($M = 3.47$) and personal or recreational travelers reported the lowest mean ($M = 3.39$). Frequent/repeat guests registered the highest mean score ($M = 3.75$) indicating a stronger perception of environmental sustainability practices, and occasional guests registered the lowest mean ($M = 3.32$). Among hotel establishments, Hotel A had the highest mean ($M = 3.44$) and Hotel C had the lowest mean ($M = 3.32$). But despite these differences most groups consistently rated environmental green adoption practices to be at a very high extent implementation.

Table 8 Extent of Green Adoption Practices in terms of Environmental factors when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	18 – 29 years old	0.508	3.41	Very High Extent
	30 – 39 years old	0.413	3.53	Very High Extent
	40 years old and above	0.875	2.96	Very High Extent
Sex	Male	0.572	3.43	Very High Extent
	Female	0.504	3.39	Very High Extent
Work-related Travel		0.435	3.47	Very High Extent

Purpose of Stay	Family-related Travel	0.622	3.41	Very High Extent
	Personal/Recreational Travel	0.528	3.39	Very High Extent
Type of Guest	Local	0.467	3.44	Very High Extent
	Foreign	0.907	3.26	Very High Extent
	Others	0.755	3.15	High Extent
	First-time Visitors	0.437	3.42	Very High Extent
Frequency of Visit	Occasional Guest	0.687	3.32	Very High Extent
	Frequent/Repeat Guest	0.358	3.75	Very High Extent
	Others	0.548	3.33	Very High Extent
	Hotel A	0.413	3.44	Very High Extent
Hotel Checked-in	Hotel B	0.558	3.42	Very High Extent
	Hotel C	0.467	3.32	Very High Extent
	Hotel D	0.714	3.33	Very High Extent
Overall		0.527	3.41	Very High Extent

The results show that guests are generally aware and appreciative of the environmental sustainability initiatives being implemented by hotels. The high marks suggest that guests are able to see environmental practices such as energy conservation, waste management, water conservation measures and environmentally responsible practices and that these are positively impacting their overall perceptions of the establishments. The much higher scores among frequent or repeat guests could imply that repeated exposure allows guests to witness and value sustainability efforts over time. In the meantime, the lower ratings from older guests suggest that hotels need to think about better communicating and making their environmental programs more visible to make sure their sustainability efforts are equally recognized by all guest segments. Overall, the results indicate that environmental responsibility has become a visible and valued part of the guest experience in the researched hotels.

The findings are in line with recent hospitality sustainability literature which emphasizes the increasing influence of environmental practices on guest perceptions and satisfaction. Green practices that are visible have a positive influence on guests' appraisal of hotel performance and increase their willingness to revisit the eco-friendly hotel Han et al. (2022). More over Merli et al. (2022) found that hotel guests are attaching more importance to sustainability practices, particularly in relation to energy efficiency, waste reduction, and environmental stewardship. Another study by Peng & Chen, (2023) revealed that environmentally conscious practices positively influence guest trust, satisfaction, and loyalty in hospitality settings. Furthermore, Pereira et al. (2024) mentioned that the successful implementation of green hotel initiatives leads to positive customer experiences and supports long-term sustainability goals. These studies support the present findings that guests perceive the environmental green adoption practices to be implemented at a very high extent and recognize their importance in shaping hotel experiences.

Table 9 Extent of Green Adoption Practices in terms of Social factors when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	18 – 29 years old	0.4855	3.44	Very High Extent
	30 – 39 years old	0.427	3.57	Very High Extent
	40 years old and above	0.610	3.09	Very High Extent
Sex	Male	0.578	3.43	Very High Extent
	Female	0.440	3.43	Very High Extent
	Work-related Travel	0.454	3.46	Very High Extent
Purpose of Stay	Family-related Travel	0.515	3.47	Very High Extent
	Personal/Recreational Travel	0.499	3.42	Very High Extent
	Local	0.443	3.46	Very High Extent
Type of Guest	Foreign	0.686	3.36	Very High Extent

	Others	0.750	3.19	High Extent
	First-time Visitors	0.424	3.45	Very High Extent
Frequency of Visit	Occasional Guest	0.571	3.37	Very High Extent
	Frequent/Repeat Guest	0.440	3.70	Very High Extent
	Others	0.537	3.34	Very High Extent
	Hotel A	0.425	3.42	Very High Extent
Hotel Checked-in	Hotel B	0.474	3.47	Very High Extent
	Hotel C	0.414	3.46	Very High Extent
	Hotel D	0.706	3.37	Very High Extent
Overall		0.490	3.44	Very High Extent

Table 9 shows the extent of green adoption practices in terms of social factors when grouped by the guests' demographic profile. The overall mean of 3.44 (SD = .490) reflects a Very High Extent of social sustainability practices among the participating hotels. Among the age groups, guests aged between 30-39 years obtained the highest mean score (M = 3.57), while those aged 40 years and above recorded the lowest mean (M = 3.09). The perception of both male and female guests were the same with a mean of 3.43 which indicate the very high extent of social green adoption practices. As for the purpose of stay, family-related travelers scored the highest mean (M = 3.47), whereas personal or recreational travelers scored the lowest mean (M = 3.42). The highest mean score (M= 3.70) was posted by frequent or repeat guests, while the lowest mean (M= 3.34) was recorded by guests under "Others". Hotel B had the highest mean (M = 3.47) of the hotels that participated in the study while Hotel D had the lowest mean (M = 3.37). In general, the results show that the social sustainability initiatives were perceived to be implemented at a very high level by the guests in the hotels.

The results indicate that hotels are successfully incorporating social sustainability practices into their business, generating positive experiences for guests and encouraging ethical and socially responsible business practices. The high ratings are a testament to the fact that guests recognize hotels' efforts in employee welfare, community engagement, inclusivity, guest safety and responsible stakeholder relations. The especially high ratings among frequent or repeat guests may suggest that ongoing interactions with the hotels offer more chances to notice and appreciate these social initiatives. Similarly, the strong ratings from family-related travelers suggest that socially responsible practices have a positive impact on the overall guest experience. These results underline the necessity of keeping a people-centered approach in hotel management, in which social responsibility is regarded as a crucial factor in creating trust, satisfaction, and long-term guest loyalty.

These results are backed by recent studies that highlight the importance of social sustainability in improving guest experiences and organizational performance in the hospitality sector. Font et al. (2021) found that socially responsible practices have a positive impact on customer perceptions and enhance trust in hospitality establishments. Similarly, Baniya et al. (2022) found that guests are increasingly interested in hotels' commitment to employee well-being, community development and ethical business practices. Su and Swanson (2023) in their study on sustainable tourism experiences found that social sustainability initiatives play a significant role in customer satisfaction and positive behavioral intentions. Moreover, Sharma and Verma (2025) pointed out that socially responsible hospitality practices improve stakeholder relations and enhance long-term sustainability of the organization. Overall, these studies support the present findings that guests perceive social green adoption practices to be implemented at a very high extent and recognize their contribution to a positive and responsible hospitality experience.

Table 10 Extent of Green Adoption Practices in terms of Economic factors when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
	18 – 29 years old	0.501	3.43	Very High Extent

Age		30 – 39 years old	0.456	3.47	Very High Extent
		40 years old and above	0.603	3.01	High Extent
Sex		Male	0.597	3.40	Very High Extent
		Female	0.454	3.42	Very High Extent
		Work-related Travel	0.447	3.43	Very High Extent
Purpose of Stay		Family-related Travel	0.502	3.44	Very High Extent
		Personal/Recreational Travel	0.530	3.40	Very High Extent
Type of Guest		Local	0.469	3.44	Very High Extent
		Foreign	0.625	3.31	Very High Extent
		Others	0.746	3.18	High Extent
		First-time Visitors	0.427	3.42	Very High Extent
Frequency	of	Occasional Guest	0.572	3.37	Very High Extent
Visit		Frequent/Repeat Guest	0.458	3.65	Very High Extent
		Others	0.614	3.32	Very High Extent
		Hotel A	0.428	3.40	Very High Extent
Hotel		Hotel B	0.479	3.45	Very High Extent
Checked-in		Hotel C	0.446	3.44	Very High Extent
		Hotel D	0.728	3.31	Very High Extent
Overall			0.506	3.41	High Extent

The extent of green adoption practices in terms of economic factors grouped according to the guests' demographic profile is presented in Table 10. The overall mean of 3.41 (SD = .506) suggests a High Extent of implementation of economic sustainability practices across the participating hotels. Among the age groups, the guests in the age group of 30-39 years recorded the highest mean score of (M = 3.47) while the guests in the age group of 40 years and above got the lowest mean of (M = 3.01). Female guests reported a marginally higher mean (M = 3.42) than male guests (M = 3.40). Family-related travelers registered the highest mean score (M = 3.44) in terms of purpose of stay, while personal or recreational travelers recorded the lowest mean (M = 3.40). The highest mean (M = 3.65) was obtained by frequent or repeat guests, showing stronger recognition of economic sustainability initiatives, whereas respondents classified under "Others" registered the lowest mean (M = 3.32). Among participating hotels, Hotel B scored the highest (M = 3.45) and Hotel D the lowest (M = 3.31). Although some differences between groups exist, overall findings show that guests perceive economic sustainability practices to be implemented at a high level. The results indicate that guests acknowledge the hotels' attempts to adopt economically sustainable practices leading to operational efficiency and long-term viability of business. These practices can include resource conservation, cost-effective operations, responsible procurement, and investment in sustainable technologies that can benefit both the organization and its stakeholders. The relatively high ratings across demographic categories suggest that guests view sustainability not just as an environmental concern but also as a strategy for improving service quality and organizational performance. The particularly high ratings among repeat guests indicate that repeated exposure to hotel operations allows guests to better appreciate the economic benefits associated with sustainability initiatives. These results highlight the importance of balancing financial performance with sustainable practices to ensure customer satisfaction and organizational growth.

The results are in line with recent research highlighting the economic value of sustainability initiatives in the hospitality industry. García-Sánchez et al. (2021) found that sustainable business practices positively contribute to hotel performance through enhancing operational efficiency and strengthening competitive advantage. Similarly, Dube and Nhamo (2022) indicated that sustainability investments in hotels result in long-term economic benefits through resource optimization, cost reduction, and improved market reputation. In another study, Elkhwesky et al. (2023) concluded that green economic practices lead to better financial outcomes and simultaneously enhance customer confidence in hospitality establishments. Additionally, Santos et al. (2024) emphasized that economically sustainable strategies allow hospitality businesses to attain resilience and longterm profitability in a highly competitive environment. The present findings that guests perceive economic sustainability practices as highly evident and beneficial within hotel operations are supported by these studies. The results indicate that guests are aware of the existence and effectiveness of technologies used to monitor, detect and facilitate hotel operations. These technologies can include security

systems, surveillance tools, automated monitoring systems, and digital platforms that help with operational efficiency and guest safety.

Table 11 Extent of Technological Integration in terms of Detections of Hotels in Bacolod when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	18 – 29 years old	0.499	3.40	Very High Extent
	30 – 39 years old	0.580	3.47	Very High Extent
	40 years old and above	0.456	3.27	Very High Extent
Sex	Male	0.612	3.40	Very High Extent
	Female	0.440	3.39	Very High Extent
Purpose of Stay	Work-related Travel	0.483	3.43	Very High Extent
	Family-related Travel	0.493	3.43	Very High Extent
	Personal/Recreational Travel	0.517	3.37	Very High Extent
Type of Guest	Local	0.480	3.41	Very High Extent
	Foreign	0.404	3.51	Very High Extent
	Others	0.751	3.18	High Extent
Frequency of Visit	First-time Visitors	0.456	3.39	Very High Extent
	Occasional Guest	0.575	3.36	Very High Extent
	Frequent/Repeat Guest	0.412	3.66	Very High Extent
	Others	0.543	3.33	Very High Extent
Hotel Checked-in	Hotel A	0.442	3.37	Very High Extent
	Hotel B	0.422	3.47	Very High Extent
	Hotel C	0.468	3.43	Very High Extent
	Hotel D	0.737	3.25	High Extent
Overall		0.504	3.40	Very High Extent

The high scores across demographic groups indicate that technology-based detection systems are visible and appreciated by guests, increasing their confidence in hotel operations. The especially high ratings from international and repeat guests may reflect greater familiarity with technology-enabled services and a stronger ability to observe their benefits during hotel stays. The findings also point to hotels making good use of technology for security, consistency of service and operational control, which improves the overall guest experience.

Findings are in line with recent studies that emphasize the relevance of detection and monitoring technologies in the hospitality industry. According to Tussyadiah (2022), advanced technologies foster operational transparency, guest safety and service effectiveness through real-time monitoring and data collection. Pillai and Sivathanu (2023) also stated that smart hotel technologies enhance customer experience through their efficiency, security, and responsiveness. Dwivedi et al. (2023) in the context of a study on hospitality digitalization found that technology-enabled monitoring systems are essential for operational excellence and customer confidence. In addition, Koo and Gretzel (2024) pointed out that hotels can use intelligent detection technologies to enhance service provision, improve security, and increase organizational performance. These studies together support the present findings that technological integration related to detection is highly visible and perceived positively by hotel guests.

Table 12 presents the level of technological integration in the terms of engagement of hotels in Bacolod City when classified based on the guests' demographic profile. The overall mean of 3.42 (SD = .450) shows that there is a Very High Extent of technological integration.

The mean score was highest among the age groups of 30–39 years (M = 3.48) and lowest among those aged

40 years and above ($M = 3.33$). Female guests had a slightly higher mean ($M = 3.43$) than male guests ($M = 3.40$). Regarding the purpose of stay, family-related travellers had the highest mean score ($M = 3.50$), while personal or recreational travellers recorded the lowest mean ($M = 3.39$). The mean score for local and foreign guests were the same ($M = 3.44$) which shows similar perceptions regarding engagement-related technological integration. The highest mean score ($M = 3.63$) was posted by frequent or repeat guests, while respondents categorized under “Others” registered the lowest mean ($M = 3.37$).

Table 12 Extent of Technological Integration in terms of Engagement of Hotels in Bacolod when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	18 – 29 years old	0.495	3.42	Very High Extent
	30 – 39 years old	0.586	3.48	Very High Extent
	40 years old and above	0.465	3.33	Very High Extent
Sex	Male	0.621	3.40	Very High Extent
	Female	0.425	3.43	Very High Extent
Purpose of Stay	Work-related Travel	0.462	3.41	Very High Extent
	Family-related Travel	0.435	3.50	Very High Extent
	Personal/Recreational Travel	0.526	3.39	Very High Extent
Type of Guest	Local	0.471	3.44	Very High Extent
	Foreign	0.472	3.44	Very High Extent
	Others	0.751	3.19	High Extent
Frequency of Visit	First-time Visitors	0.454	3.42	Very High Extent
	Occasional Guest	0.553	3.39	Very High Extent
	Frequent/Repeat Guest	0.460	3.63	Very High Extent
	Others	0.559	3.37	Very High Extent
Hotel Checked-in	Hotel A	0.444	3.40	Very High Extent
	Hotel B	0.428	3.51	Very High Extent
	Hotel C	0.444	3.43	Very High Extent
	Hotel D	0.732	3.28	High Extent
Overall		0.450	3.42	Very High Extent

Among the accommodation establishments, Hotel B had the highest mean ($M = 3.51$) while Hotel D had the lowest mean ($M = 3.28$). Overall, the results indicate that guests perceive engagement-related technological integration to be implemented at a very high extent in the participating hotels.

The results show that technological tools are effectively facilitating communication, interaction and engagement between hotels and their guests. The consistently high ratings suggest that guests value the use of digital platforms, online communication channels, automated services, and technology-enabled interactions that enhance convenience and responsiveness. Family-related travelers and repeat guests might have more opportunities to experience and benefit from engagement-oriented technologies during their hotel stays, which may be reflected in higher ratings. Furthermore, the results indicate that hotels are successfully adopting digital innovations to improve guest relationships, increase service accessibility, and promote a more interactive and customer-centered hospitality experience. As guest expectations continue to evolve in the digital age, maintaining effective engagement technologies remains important to enhance satisfaction and loyalty.

Supporting the findings, recent studies underline the significance of technology-driven engagement in the hospitality industry. However, Hollebeek, and Rasoolimanesh (2022) found that digital engagement technologies greatly enhance guest experiences by improving communication, interaction, and service availability. Similarly, Wang et al. (2023) identified that technology-enabled customer engagement

positively affects guest satisfaction and enhances customer loyalty in hotel settings. Another study by Fan et al. (2024) highlighted the significance of interactive digital platforms in providing more personalized and engaging hospitality experiences, leading to enhanced customer engagement and perceived service quality. Furthermore, Kim and Lee (2025) demonstrated that technological engagement tools are critical to establishing long-term customer relationships by offering convenience, responsiveness, and regular interaction between hotels and guests. These studies reinforce the current findings that the technological integration regarding engagement is very obvious and is positively viewed by hotel guest.

Table 13 Extent of Technological Integration in terms of Agility of Hotels in Bacolod when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	18 – 29 years old	0.499	3.41	Very High Extent
	30 – 39 years old	0.609	3.43	Very High Extent
	40 years old and above	0.453	3.30	Very High Extent
Sex	Male	0.632	3.40	Very High Extent
	Female	0.427	3.40	Very High Extent
Purpose of Stay	Work-related Travel	0.455	3.42	Very High Extent
	Family-related Travel	0.421	3.50	Very High Extent
	Personal/Recreational Travel	0.543	3.37	Very High Extent
Type of Guest	Local	0.480	3.42	Very High Extent
	Foreign	0.470	3.41	Very High Extent
	Others	0.750	3.19	High Extent
Frequency of Visit	First-time Visitors	0.454	3.40	Very High Extent
	Occasional Guest	0.527	3.43	Very High Extent
	Frequent/Repeat Guest	0.507	3.55	Very High Extent
Hotel Checked-in	Others	0.606	3.31	Very High Extent
	Hotel A	0.436	3.38	Very High Extent
	Hotel B	0.429	3.51	Very High Extent
	Hotel C	0.430	3.40	Very High Extent
	Hotel D	0.765	3.24	High Extent
Overall		0.505	3.40	Very High Extent

Table 13 shows the level of technological integration on agility of hotels in Bacolod City grouped by the demographic profile of guests. The overall mean of 3.40 (SD =.505) indicates a Very High Extent of technological integration. The highest mean was observed in guests aged 30–39 years (M = 3.43) and the lowest mean was observed in guests aged 40 years and above (M = 3.30). Male and female respondents reported similar mean scores (M = 3.40), indicating similar perceptions about technological integration related to agility. Regarding the purpose of stay, family-related travelers had the highest mean (M=3.50) while personal or recreational travelers had the lowest mean (M=3.37). Frequent or repeat guests scored the highest on average (M = 3.55) and those classified as “Others” scored the lowest (M = 3.31). Hotel B had the highest mean score (M = 3.51) and Hotel D had the lowest mean (M = 3.24) among the participating hotels, which was interpreted as High Extent. Although these variations exist, the findings generally suggest that the technological integration related to agility is perceived by the guests as being implemented to a very high extent.

The findings show that technology allows hotels to respond quickly and effectively to the needs of their guests, operational challenges and changing market demands. The consistently high ratings indicate that guests see the role of technology in enabling flexible service delivery, timely responses and efficient problem solving. The higher share of positive reviews among family travelers and repeat guests could suggest that these groups may have more opportunities to experience the benefits of technology-driven

flexibility during their stay. Furthermore, the findings show that hotels are implementing technological innovations to enhance operations, responsiveness and service quality. The hospitality industry is ever-evolving, and remaining technologically agile is essential to meet guest expectations and maintain competitive advantage.

The results are consistent with recent studies highlighting the importance of agility in technology-enabled hospitality operations. In the study by Cang et al. (2022), the authors found that digital technologies improve organizational agility by enhancing decision-making, quicker responses, and more effective delivery of services. Likewise, Mariani and Borghi (2023) reported that hospitality organizations that adopt advanced digital solutions are better positioned to adapt to dynamic customer expectations and market changes. In another study, Sigala (2024) noted that technology-driven agility enhances service innovation and organizational adaptability, leading to improved customer experiences. Furthermore, Leung and Wen (2025) found that the use of agile technology helps hospitality organizations to respond effectively to operational disruptions and changing consumer demands, thereby enhancing the performance of overall organizational performance. The results support the current findings that the use of agility-related technology is very clear and well received by hotel guests.

Table 14 Extent of Technological Integration in terms of Continuity of Hotels in Bacolod when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	18 – 29 years old	0.519	3.41	Very High Extent
	30 – 39 years old	0.561	3.46	Very High Extent
	40 years old and above	0.396	3.26	Very High Extent
Sex	Male	0.653	3.38	Very High Extent
	Female	0.432	3.42	Very High Extent
Purpose of Stay	Work-related Travel	0.452	3.36	Very High Extent
	Family-related Travel	0.405	3.52	Very High Extent
	Personal/Recreational Travel	0.565	3.39	Very High Extent
Type of Guest	Local	0.498	3.42	Very High Extent
	Foreign	0.324	3.55	Very High Extent
	Others	0.750	3.19	High Extent
Frequency of Visit	First-time Visitors	0.466	3.41	Very High Extent
	Occasional Guest	0.536	3.40	Very High Extent
	Frequent/Repeat Guest	0.413	3.65	Very High Extent
Hotel Checked-in	Others	0.643	3.30	Very High Extent
	Hotel A	0.439	3.40	Very High Extent
	Hotel B	0.459	3.50	Very High Extent
	Hotel C	0.436	3.40	Very High Extent
	Hotel D	0.785	3.27	Very High Extent
Overall		0.517	3.41	Very High Extent

Table 14 shows the level of technological integration in relation to the continuity of hotels in Bacolod City as classified by demographic profile of the guests. The overall mean of 3.41 (SD = .517) indicates a Very High Extent of technology integration. As to the age groups, guests aged 30–39 years received the highest mean score (M = 3.46) and guests aged 40 years and above received the lowest mean (M = 3.26). Women reported a slightly higher mean (M = 3.42) than men (M = 3.38). The highest mean score in terms of purpose of stay was obtained by family-related travelers (M = 3.52), and the lowest mean was obtained by work-related travelers (M = 3.36). Foreign guests obtained the highest mean (M = 3.55) while the lowest mean (M = 3.19) was obtained by respondents under the category “Others”, both interpreted as High Extent. Frequent or repeat guests recorded the highest mean score (M = 3.65) and respondents under the “Others” category recorded the lowest mean score (M = 3.30). In terms of accommodation establishments, the highest mean score (M = 3.50) was obtained by Hotel B, and the lowest mean (M = 3.27) by Hotel D. The results show in

general that technological integration related to continuity is applied to a very high degree in the hotels involved, according to the guests.

The results indicate that technology is a key tool to ensure continuity of hotel operations and service delivery. The consistently high ratings reflect the awareness of guests of the capacity of hotels to provide seamless services, reliable communication and uninterrupted operations through digital systems and technological infrastructure. The higher ratings of family-related travelers, foreign guests, and repeat visitors may imply that these groups are more likely to experience and value the consistency and reliability that technology-enabled services offer. The results also suggest that technological continuity increases guest confidence, service reliability and overall satisfaction. With hotels' growing dependence on digital platforms and automated systems, it is imperative to ensure these technologies are always available and functional to preserve service excellence and operational resilience. Recent studies have confirmed these findings, highlighting the importance of technology in ensuring service reliability and business continuity in the hospitality sector. Digital technologies enhance the operational continuity through allowing organizations to sustain the efficient service delivery under changing business conditions Alzoubi et al., (2022). Similarly, digital transformation was shown to improve organizational

resilience and continuity via improved process integration and information management (Kraus et al., 2023). Buhalis and Sinarta (2024) highlight the role of technology-enabled continuity systems in hospitality in helping hotels maintain consistent service quality, enhance guest experiences and support long-term sustainability goals. In addition, (Chatterjee et al., 2025) found that digital strategies that emphasize continuity help organizations to be more adaptable, minimize operational disruptions, and build customer trust in service organizations. These studies corroborate the present findings that the technological integration related to continuity is highly evident and significantly contributes to sustaining reliable hotel operations and positive guest experiences.

Table 15 presents the level of service quality in terms of tangibility of hotels in Bacolod City when categorized based on the demographic profile of the guests. The overall mean of 3.11 (SD = .482) implies a High Extent of service quality in terms of tangibility. The guests aged 30 – 39 years had the highest mean score (M = 3.26) which is interpreted as Very High Extent while the guests aged 40 years and above had the lowest mean score (M = 2.91) which is interpreted as High Extent. The foreign guests had the highest mean (M = 3.21) while respondents under the category “Others” had the lowest mean (M = 2.95). With respect to frequency of visit, frequent or repeat guests got the highest mean score (M = 3.29) and respondents under “Others” category got the lowest mean (M = 3.02). Among the participating hotels, Hotel C had the highest mean score (M=3.29) while Hotel D had the lowest mean (M=3.02). The overall results indicate that the guests perceive the physical facilities, equipment, appearance of personnel and tangible aspects of hotel services as being high obvious

Table 15 Level of Service Quality in terms of Tangibility of Hotels in Bacolod City when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	18 – 29 years old	0.483	3.09	High Extent
	30 – 39 years old	0.457	3.26	Very High Extent
	40 years old and above	0.476	2.91	High Extent
Sex	Male	0.540	3.15	High Extent
	Female	0.450	3.08	High Extent
Purpose of Stay	Work-related Travel	0.450	3.11	High Extent
	Family-related Travel	0.431	3.20	High Extent
	Personal/Recreational Travel	0.506	3.07	High Extent
Type of Guest	Local	0.476	3.11	High Extent
	Foreign	0.493	3.21	High Extent
	Others	0.534	2.95	High Extent
	First-time Visitors	0.433	3.11	High Extent

Frequency of Visit	Occasional Guest	0.541	3.08	High Extent
	Frequent/Repeat Guest	0.406	3.29	High Extent
	Others	0.550	3.02	High Extent
	Hotel A	0.426	3.11	High Extent
Hotel Checked-in	Hotel B	0.541	3.08	High Extent
	Hotel C	0.406	3.29	High Extent
	Hotel D	0.550	3.02	High Extent
Overall		0.482	3.11	High Extent

The findings suggest the hotels involved have maintained good physical environments and service facilities that improve the guest experience. The ratings are relatively high and show that guests are generally satisfied with the cleanliness, appearance, equipment, and general physical presentation of the hotels. However, in comparison with the previous dimensions that were rated very highly, tangibility had a relatively lower overall mean, indicating a potential for further improvement in physical facilities and visual appeal. Further enhancement of hotel ambience, modernization of facilities, maintenance of equipment and physical comfort may raise guests' satisfaction and improve the perception of service quality. Given the highly competitive nature of the hospitality industry, investment in tangible service attributes is still very important in creating positive first impressions and encouraging repeat patronage.

The results are consistent with recent studies that highlight the role of tangibility as an important dimension of service quality in hospitality businesses. Guests' assessment of hotel facilities, cleanliness and physical appearance has a significant bearing on their overall satisfaction and intentions to revisit Azzopardi and Nash, (2021). Likewise, Sharma and Srivastava (2022) found that tangible service aspects such as modern facilities, attractive environments, and well-maintained equipment are the strongest predictors of perceived hotel quality. In another study, Nguyen and Dang (2023) found that improvements in physical infrastructure and service environments positively affect customer experiences and loyalty in hospitality organizations. Moreover, Islam et al. (2024) pointed out that tangible attributes remain an essential part of the service quality since these form guests' initial impressions and impact their overall evaluation of hotel performance. In general, the studies support the present findings that tangibility is perceived positively by guests and continues to be a key determinant of service quality in hotel operations.

Table 16 presents the level of service quality of hotels in Bacolod City when grouped according to the guests' demographic profile in terms of reliability. The mean of 3.39 (SD =.490) shows a Very High Extent of service quality in terms of reliability. Regarding the age groups, the guests aged between 30 and 39 years old had the highest mean score (M = 3.50) whereas the age group of 40 years and above had the lowest mean score (M = 3.33). Correspondingly, male and female respondents had the same mean scores (M=3.39) showing similar view on reliable service delivery.

Table 16 Level of Service Quality in terms of Reliability of Hotels in Bacolod City when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	18 – 29 years old	0.484	3.38	Very High Extent
	30 – 39 years old	0.498	3.50	Very High Extent
	40 years old and above	0.612	3.33	Very High Extent
Sex	Male	0.548	3.39	Very High Extent
	Female	0.459	3.39	Very High Extent
Purpose of Stay	Work-related Travel	0.493	3.39	Very High Extent
	Family-related Travel	0.483	3.46	Very High Extent
	Personal/Recreational Travel	0.493	3.36	Very High Extent
Type of Guest	Local	0.479	3.38	Very High Extent
	Foreign	0.375	3.59	Very High Extent
	Others	0.641	3.27	Very High Extent

Frequency of Visit	First-time Visitors	0.471	3.37	Very High Extent
	Occasional Guest	0.506	3.40	Very High Extent
	Frequent/Repeat Guest	0.439	3.60	Very High Extent
	Others	0.533	3.32	Very High Extent
Hotel Checked-in	Hotel A	0.497	3.38	Very High Extent
	Hotel B	0.435	3.54	Very High Extent
	Hotel C	0.456	3.36	Very High Extent
	Hotel D	0.616	3.29	Very High Extent
Overall		0.490	3.39	Very High Extent

Concerning purpose of stay, the highest mean was for family-related travelers ($M = 3.46$) and the lowest mean was for personal or recreational travelers ($M = 3.36$). Foreign guests got the highest mean ($M = 3.59$). While respondents categorized as “Others” had the lowest mean ($M = 3.27$). The highest mean score ($M = 3.60$) was posted by frequent or repeat guests while respondents under the “Others” category posted the lowest mean ($M = 3.32$). Hotel B had the highest mean score ($M = 3.54$) among the participating hotels, whereas Hotel D had the lowest mean ($M = 3.29$). The results reveal that hotel services are felt by the guests as dependable, uniform and capable to deliver accurate and efficient delivery of services promised.

The results show that the hotels under study have managed to build a reputation for reliable and consistent service delivery. The high ratings across all demographic groups indicate that guests generally trust the hotels to fulfill their commitments, provide accurate services and respond effectively to customer needs. The very high scores given by foreign guests and repeat visitors may indicate that reliability has a key role in producing positive experiences and in building guest loyalty. Reliability is usually regarded as one of the most important dimensions of service quality as it directly influences customer confidence and satisfaction. Hence, maintaining consistency in service standards, fulfilling promises and delivering accurate service continue to be critical to sustain positive guest perception and enhance competitive advantage in hospitality industry.

The results are in line with recent studies that have emphasized the importance of reliability in determining overall service quality and customer satisfaction. Amin et al. (2021) found that delivering services reliably plays a crucial role in building guest trust, satisfaction and encouraging them to return to hospitality venues. Likewise, guests appreciate organizations that deliver service promises consistently, and reliability is one of the strongest predictors of customer loyalty Gupta & Singh, (2022). In their study on the quality of hotel services, Albayrak and Caber (2023) concluded that reliable and accurate service delivery positively impacts the client’s experiences and builds long-term customer relationships. Furthermore, Tran and Nguyen (2024) stated that reliability remains a core element of hospitality excellence because it is directly related to customer confidence, positive word-of-mouth, and continued organizational performance. These studies are consistent with the current findings that reliability is very evident among the surveyed hotels, and is perceived by guests as a major indicator of quality service provision.

Table 17 Level of Service Quality in terms of Responsiveness of Hotels in Bacolod City when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation
Age	18 – 29 years old	0.508	3.43	Very High Extent
	30 – 39 years old	0.454	3.56	Very High Extent
	40 years old and above	0.887	2.67	High Extent
Sex	Male	0.621	3.40	Very High Extent
	Female	0.502	3.41	Very High Extent
Purpose of Stay	Work-related Travel	466	3.46	Very High Extent
	Family-related Travel	0.676	3.43	Very High Extent
	Personal/Recreational Travel	0.527	3.37	Very High Extent

	Local	0.490	3.43	Very High Extent
Type of Guest	Foreign	0.908	3.28	Very High Extent
	Others	0.760	3.18	High Extent
	First-time Visitors	0.461	3.44	Very High Extent
Frequency of Visit	Occasional Guest	0.676	3.32	Very High Extent
	Frequent/Repeat Guest	0.493	3.60	Very High Extent
	Others	0.570	3.35	Very High Extent
	Hotel A	0.514	3.42	Very High Extent
Hotel Checked-in	Hotel B	0.557	3.43	Very High Extent
	Hotel C	0.440	3.40	Very High Extent
	Hotel D	0.713	3.34	Very High Extent
Overall		0.544	3.41	Very High Extent

Table 17 shows the level of service quality in terms of responsiveness of the hotels in Bacolod City when grouped according to the profile of the guests' demographics. The total mean is 3.41 which indicates Very High Extent of service quality in terms of responsiveness. Guests in the age groups of 30–39 years of age recorded the highest mean score ($M = 3.56$) and guests aged 40 years and above revealed the lowest mean score ($M = 2.67$) which was interpreted as High Extent. Female respondents reported slightly higher mean scores ($M = 3.41$) than did male respondents ($M = 3.40$). With regard to the purpose of stay, travelers for work purposes scored the highest mean ($M = 3.46$), while personal or recreation travelers scored the lowest mean ($M = 3.37$). Frequent or repeat guests had the highest mean score ($M = 3.60$) while “Others” respondents had the lowest mean ($M = 3.35$). Among the participating hotels, Hotel B had the highest mean ($M = 3.43$) and Hotel D had the lowest mean ($M = 3.34$).

The overall results suggest that the hotel employees are perceived by the guests as willing and able to provide a quick helping hand and prompt service. The findings indicate that the participating hotels have established a solid culture of quick service and customer support. Consistently high ratings reflect that guests generally receive timely responses to inquiries, requests and concerns during their stay. In the hospitality industry, responsiveness is of particular importance because it impacts guest satisfaction and the perception of service excellence. Repeat guests rated us higher, which could indicate that being responsive consistently leads to pleasant experiences and customer loyalty. However, the comparatively lower ratings from older guests indicate that hotels could enhance service delivery by ensuring that response mechanisms are equally efficient and available to all guest segments. Fast communication and effective service recovery strategies are of utmost importance to maintain high levels of guest satisfaction.

This research supports the findings of recent studies which have emphasized the importance of responsiveness as a key dimension of service quality in hospitality organizations. Otoo, Kim, and Choi (2021) verified the prompt responses of employees and timely service delivery to have significant effects on customer satisfaction and revisit intentions in hotel settings. Similar to that, Akhtar et al. (2022) found that responsiveness enhances customer views of service quality by showing attentiveness and dedication to guest needs. Nunkoo et al. (2023) studied hospitality service excellence and found responsiveness to be a strong predictor of positive customer experiences and overall service evaluations. Furthermore, Alananzeh et al. (2024) highlighted that a quick response to customer concerns builds trust, increases satisfaction, and promotes loyalty among hotel customers. The studies confirm the current findings that the participating hotels are highly responsive and responsiveness is still an important contributor to superior service quality.

Table 18 presents the level of service quality in terms of assurance of the hotels in Bacolod City when classified based on the demographic profile of the guests. The overall mean of 3.41 ($SD = .544$) indicates a Very High Extent of service quality in assurance. Among the age groups, guests aged 30–39 years got the highest mean score ($M = 3.56$) whereas guests aged 40 years and above got the lowest mean score ($M = 2.67$). The average of female guests was slightly higher ($M = 3.41$) than the average of male guests ($M = 3.40$).

In terms of purpose of stay, work-related travelers had the highest mean ($M = 3.46$) and personal or recreational travelers had the lowest mean ($M = 3.38$). Respondents who belong to the “Others” category registered the lowest mean ($M = 3.35$) while the frequent or repeat guests registered the highest mean score ($M = 3.60$). The highest mean score was received by Hotel B among the participating hotels ($M = 3.43$) while Hotel D recorded the lowest mean ($M = 3.34$).

Table 18 Level of Service Quality in terms of Assurance of Hotels in Bacolod City when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation	
Age	18 – 29 years old	0.508	3.42	Very High Extent	
	30 – 39 years old	0.454	3.56	Very High Extent	
	40 years old and above	0.887	2.67	Very High Extent	
Sex	Male	0.622	3.40	Very High Extent	
	Female	0.502	3.41	Very High Extent	
Purpose of Stay	Work-related Travel	0.466	3.46	Very High Extent	
	Family-related Travel	0.676	3.43	Very High Extent	
	Personal/Recreational Travel	0.676	3.38	Very High Extent	
Type of Guest	Local	0.490	3.44	Very High Extent	
	Foreign	0.909	3.38	Very High Extent	
	Others	0.760	3.18	High Extent	
Frequency of Visit	First-time Visitors	0.462	3.43	Very High Extent	
	Occasional Guest	0.676	3.32	Very High Extent	
	Frequent/Repeat Guest	0.493	3.60	Very High Extent	
	Others	0.570	3.35	Very High Extent	
Hotel Checked-in	Hotel A	0.513	3.42	Very High Extent	
	Hotel B	0.557	3.43	Very High Extent	
	Hotel C	0.440	3.41	Very High Extent	
	Hotel D	0.713	3.34	Very High Extent	
Overall	0.544		3.41	Very Extent	High

In general, the findings suggest that hotel employees are perceived by guests as knowledgeable, courteous, and able to produce trust and confidence in service encounters.

The results indicate that the hotels that participated have been able to build credibility and trust to their guests. High ratings in all demographic groups demonstrate that guests generally have confidence in the competence, professionalism and reliability of hotel personnel. Assurance is important in hospitality industry as it influences the perception of guests with respect to safety, security and dependability of service. The higher ratings among repeat guests may suggest that positive experiences breed repeat guests’ trust and confidence in hotel services. More over the findings suggest that the workers possess the required skills and knowledge to solve the concerns of the guests in an efficient way, which will lead to a positive service experience and enhanced overall customer satisfaction.

The results are consistent with recent studies which highlight the importance of assurance as a key dimension of service quality in hospitality contexts. Chiu and Cho (2021) found that employee competence, professionalism, and credibility play an important role in influencing guests’ trust and satisfaction with hotel services. Similarly, (Awan et al., 2022) reported that factors related to assurance such as employee knowledge, courtesy and confidence building behavior positively affect customers’ perception of service quality and loyalty. Baniya and Paudel (2023) in a study on hotel guest experiences found that trust and confidence in the service providers are important determinants of customer satisfaction and positive

behavioral intentions. Furthermore, Rather and Hollebeek (2024) pointed out that assurance improves customer relationships through enhancing perceived reliability, reducing uncertainty, and encouraging long-term loyalty in hospitality enterprises. These studies support the current findings that assurance is very obvious in the participating hotels and is an important contributor to the exceptional service quality.

Table 19 shows the level of service quality in terms of empathy of hotels in Bacolod City when classified according to the demographic profile of the guest.

Table 19 Level of Service Quality in terms of Empathy of Hotels in Bacolod City when grouped according to the Guest Demographic Profile

Grouping Variables		SD	Mean	Interpretation	
Age	18 – 29 years old	0.506	3.40	Very High Extent	
	30 – 39 years old	0.473	3.52	Very High Extent	
	40 years old and above	0.737	2.81	High Extent	
Sex	Male	0.609	3.38	Very High Extent	
	Female	0.480	3.38	Very High Extent	
Purpose of Stay	Work-related Travel	0.420	3.47	Very High Extent	
	Family-related Travel	0.611	3.39	Very High Extent	
	Personal/Recreational Travel	0.534	3.35	Very High Extent	
Type of Guest	Local	0.490	3.40	Very High Extent	
	Foreign	0.704	3.35	Very High Extent	
	Others	0.745	3.27	Very High Extent	
Frequency of Visit	First-time Visitors	0.449	3.41	Very High Extent	
	Occasional Guest	0.638	3.29	Very High Extent	
	Frequent/Repeat Guest	0.452	3.62	Very High Extent	
Hotel	Others	0.452	3.34	Very High Extent	
	Hotel A	0.467	3.39	Very High Extent	
	Hotel B	0.543	3.40	Very High Extent	
	Hotel C	0.448	3.41	Very High Extent	
Checked-in	Hotel D	0.695	3.29	Very High Extent	
Overall		0.526	3.38	Very Extent	High

The mean score of 3.38 (SD = .526) indicates a Very High Extent of service quality with respect to empathy. Guests aged 30-39 years recorded the highest mean score (M = 3.52) while guests aged 40 years and above obtained the lowest mean score (M = 2.81) which was interpreted as High Extent among the age groups. Male and female respondents' mean score was identical (M = 3.38) indicating a common perception of empathetic service delivery. Work-related travelers had the highest mean score for the purpose of stay (M = 3.47) whereas personal or recreational travelers had the lowest mean (M = 3.35). The highest mean score was for frequent or repeat guests (M = 3.62), while the lowest mean was for occasional guests (M = 3.29). Among the hotels that participated, Hotel C received the highest mean score (M=3.41), while Hotel D received the lowest mean (M=3.29). Overall, the findings suggest that guests perceive hotel employees as caring, attentive and capable of providing personalized service to meet individual customer needs.

The results show that empathy continues to be an important factor of service quality in the hotels studied. The high scores across the board indicate that, overall, guests feel appreciated, respected and understood during their interactions with hotel staff. Empathy is very important in the hospitality industry as it demonstrates that the employees are able to provide personal attention and cater to the specific needs of the guests. The higher ratings for repeat guests may suggest that repeat guests have better service experiences and hence develop stronger customer relationships that result in repeat purchase. However, the relatively

lower ratings of older guests indicate that hotels can improve personalized service strategies further to consistently meet the expectations of all customer segments. These findings highlight the importance of maintaining a customer centric culture with a focus on attentiveness, understanding and genuine concern for guest welfare.

These conclusions are supported by recent studies that identify the essential role of empathy in the quality of service in the hospitality sector. Islam et al. (2021) show that personalized attention and employee concern for customer needs have a significant positive effect on guest satisfaction and overall service evaluations. Similarly, Al-Hawary and Al-Fassed (2022) found that empathy directly impacts customer trust, emotional connection, and loyalty in hospitality establishments. Teeroovengadam et al. (2023) in a study of hotel guest experiences found that providing personalized attention and caring service behaviors were some of the strongest predictors of positive customer perceptions and intentions to return. Furthermore, Rather et al. (2024) found that empathetic interaction creates stronger customer relationships through memorable experiences and higher perceived value of the service. These studies complement the current findings that empathy is highly observable in the participating hotels and is a core element of superior service quality.

Table 20 Differences of the Extent of Green Adoption Practices in terms of Environmental factors when grouped according to the Employees Demographic Profile

Grouping Variables

Grouping Variable	Category	SD	Mean	p-value	Interpretation
Age	20–29 years old	0.367	3.42	.013	Significant
	30–39 years old	0.387	3.25		
	40 years old and above	0.384	3.15		
Sex	Male	0.370	3.39	.245	Not Significant
	Female	0.400	3.26		
Position	Staff	0.356	3.39	.002	Significant
	Team Leader	0.435	3.39		
	Supervisor	0.312	3.04		
	Manager	.	3.53		
Years in Service	5 years and below	0.367	3.40	.006	Significant
	6–10 years	0.402	3.31		
	11 years and above	0.336	3.08		
Educational Attainment	Bachelor Degree	0.387	3.32	.014	Significant
	High School Diploma	0.075	3.68		
Hotel Checked-in	Hotel A	0.339	3.41	.386	Not Significant
	Hotel B	0.383	3.37		
	Hotel C	0.449	3.24		
	Hotel D	0.359	3.33		

Table 20 highlights the notable variations in the degree of green adoption methods in relation to environmental issues when categorized according to the demographic profile of the employees. The study findings revealed that there were significant variations in age ($p = .013$), position ($p = .002$), years in service ($p = .006$) and educational attainment ($p = .014$) as the p-values were less than the 0.05 level of significance. This suggests that employees' attitudes of environmental green adoption strategies vary by these demographic variables. In particular, younger employees aged 20–29 years ($M = 3.42$), managers ($M = 3.53$), employees with five years and below in service ($M = 3.40$), and respondents with a high school certificate ($M = 3.68$) frequently indicated higher levels of environmental green adoption practices. There were no significant differences of sex ($p = .245$) and hotel checked-in ($p = .386$), demonstrating that people had similar perceptions of environmental practices independent of gender and hotel membership.

The results indicate that individual and organizational aspects influence employees' perception and participation in environmental sustainability programs. Age, position, tenure and educational attainment

differences suggest that exposure, experience, responsibilities and educational backgrounds may influence employees' awareness and appreciation of environmental practices. Younger employees and managers may be more responsive to sustainability initiatives since they have been exposed to current environmental challenges and organizational decision-making procedures. No significant differences were found by sex or hotel affiliation, indicating that programs related to environmental sustainability are generally implemented and disseminated in a uniform manner across gender and hotel type. The findings underscore the need to develop sustainability initiatives that consider the different viewpoints and experiences of employees, as well as the need to maintain environmental standards across the firm.

The results are confirmed by recent research stressing the impact of demographic variables on sustainability attitudes and environmental behavior in enterprises. Environmental views and engagement in sustainability projects are highly affected by employee age, educational background and organizational position Nguyen, et al. (2021). Similarly, Paillé et al. (2022) reported that managerial jobs and work experience influence employees' engagement in environmental management practices due to the disparities in duties and involvement in the business. Kim and Barber (2023) examined the effect of demographic factors on the degree of sustainability consciousness and support for green initiatives among hotel workers in the hospitality sector. Moreover, Yadav et al. (2024) found that employee demographics are still major drivers of pro-environmental behavior and sustainability commitment in service firms. The research justify the current conclusions that several demographic parameters have considerable effects on the employees' attitudes of green adoption methods on the environment.

Table 21 shows the substantial disparities in the level of green adoption practices in terms of social aspects when grouped by the demographic profile of the workforce. The results showed that there were significant differences in age ($p = .035$), position ($p = .002$), years in service ($p = .050$) and educational attainment ($p = .001$) since their values were equal to or less than the 0.05 level of significance. This implies that attitudes of social sustainability strategies differ across these demographic traits of employees. The highest levels of social green adoption practices were reported by employees aged 20-29 years ($M = 3.61$), managers ($M = 3.72$), employees with five years and lower of service ($M = 3.58$), and respondents with a high school certificate ($M = 4.00$).

Table 21 Differences of the Extent of Green Adoption Practices in terms of social factor when grouped according to the Employees Demographic Profile

Grouping Variables		SD	Mean	p-value	Interpretation
Age	20 – 29 years old	0.465	3.61	.035	Significant
	30 – 39 years old	0.486	3.43		
	40 years old and above	0.505	3.29		
Sex	Male	0.465	3.59	.170	Not Significant
	Female	0.500	3.40		
Position	Staff	0.466	3.58	.002	Significant
	Team Leader	0.519	3.15		
	Supervisor	0.292	3.66		
Years in Service	Manager	.	3.72	.050	Significant
	5 years and below	0.450	3.58		
	6 – 10 years	0.537	3.49		
Educational Attainment	11 years and above	0.474	3.26	.001	Significant
	Bachelor Degree	0.486	3.50		
	High School Diploma	0.000	4.00		
	Hotel A	0.346	3.69		

Hotel Checked-in	Hotel B	0.497	3.54	.111	Not Significant
	Hotel C	0.548	3.36		
	Hotel D	0.481	3.51		

On the other hand, sex ($p = .170$) and hotel checked-in ($p = .111$) were not significantly different, meaning that the perceptions of social sustainability practices are generally similar independent of gender and hotel affiliation. The results indicate that demographic factors of employees affect their perception and evaluation of the social dimensions of sustainability in their organisations. The differences in age, position, years of service, and educational background suggest that employees' experiences, responsibilities, and exposure to organizational initiatives may influence their perception of social sustainability practices such as employee welfare, community engagement, inclusivity, and ethical workplace conduct. Organizational programs may be more actively engaged with by management and employees with shorter tenure and consequently they may have higher recognition of these programs. Further, the non-significant differences concerning sex and hotel affiliation suggest that the social sustainability policies are applied uniformly across the participating establishments, leading to relatively similar perceptions among employees regardless of their gender and workplace location.

Recent research also complement the findings in this study in emphasizing the association of demographic characteristics and views about social sustainability in businesses. The findings of Aboramadan et al. (2022) indicated that the perception of socially responsible organizational practices is highly influenced by employee factors such as age, educational background, and position in the firm. Likewise, Farooq et al. (2023) found that management personnel are more conscious about social responsibility programs because they are more actively involved in organizational decision-making and stakeholder engagement. In the hospitality industry, Karatepe et al. (2024) have out that employee demographics make opinions of workplace well-being, inclusiveness, and corporate social responsibility programs vary. Elshaer and Marzouk (2025) also found that demographic diversity has an impact on employees' views toward social sustainability practices, which stresses the need for individualized approaches to employee engagement and organizational growth. These research confirm the current findings that demographic characteristics greatly influence employees' view on social green adoption activities in hotel firms.

Table 22 Differences of the Extent of Green Adoption Practices in terms of Economic factor when grouped according to the Employees Demographic Profile

Grouping Variables		SD	Mean	p-value	Interpretation
Age	20 – 29 years old	0.451	3.61	.020	Significant
	30 – 39 years old	0.468	3.36		
	40 years old and above	0.482	3.43		
Sex	Male	0.438	3.59	.068	Not Significant
	Female	0.499	3.39		
	Staff	0.468	3.57		
Position	Team Leader	0.448	3.23	.025	Significant
	Supervisor	0.388	3.59		
	Manager	.	3.87		
Years in Service	5 years and below	0.465	3.56	.502	Not Significant
	6 – 10 years	0.485	3.51		
	11 years and above	0.466	3.36		
Educational Attainment	Bachelor Degree	0.471	3.50	.001	Significant
	High School Diploma	0.000	4.00		
	Hotel A	0.353	3.69		
Hotel Checked-in	Hotel B	0.485	3.50	.235	Not Significant
	Hotel C	0.495	3.45		
	Hotel D	0.499	3.46		

Table 22 shows the substantial disparities in the magnitude of green adoption practices for economic variables as categorized by the demographic profile of the employees. The results suggest that age ($p = .020$), position (p

$=.025$) and educational attainment ($p = .001$) had significant differences as their p -values were below the 0.05 level of significance. This means that the demographic characteristics of employees influence their opinions of economic green adoption strategies. The greatest mean score ($M = 3.61$) was reported by employees aged 20-29 years. Managers among the position groups achieved the highest mean score ($M = 3.87$). Similarly, respondents with high school diploma had the highest mean score ($M = 4.00$) reflecting higher perceptions on economic sustainability practices. On the other hand, sex ($p = .068$), years in service ($p = .502$) and hotel checked-in ($p = .235$) did not indicate significant differences, demonstrating that employees generally have similar impressions of economic green adoption methods independent of gender, tenure and hotel membership.

The results indicate that some demographic features have an impact on the employees' perception of the economic value of sustainability programs. Differences in age, status and amount of education could be explained by different levels of awareness, of responsibility and of participation in the decision-making processes of organizations. Managers might have a more nuanced grasp of the financial advantages of sustainability projects, such as cost savings, operational efficiencies, and long-term profitability. Likewise younger workers may be more exposed to contemporary sustainability ideas that emphasize the merging of economic and environmental goals. There were no significant differences in terms of sex, years of service and hotel affiliation, indicating that green economic sustainability initiatives are understood and experienced in a similar way across these groups, suggesting that the organization has a relatively consistent approach to green economic practices. This finding is in line with other studies that emphasize the role of demographic and organizational characteristics in views of economic sustainability. Organizational responsibilities and employees' educational backgrounds greatly affect the perception of economic gains derived from environmental management methods López-Gamero et al. (2021). Similarly, Giousmpasoglou et al. (2022) found that managerial personnel are more

likely to appreciate sustainability initiatives because of their direct engagement in strategic planning and resource allocation. Aboelmaged and Hashem (2023) found that in the hospitality industry, staff demographics affect perceptions of sustainability performance in terms of cost efficiency and operational effectiveness. Furthermore, Ali et al., (2024) reported that employees' education level and job position had a substantial impact on their awareness of the economic implications of sustainable company practices. The research corroborate the current conclusions that age, position and educational attainment greatly influence the perception of employees toward economic green adoption strategies in hotel organization.

Table 23 Differences of the Extent of Technological Integration in terms of Detections of Hotels in Bacolod when grouped according to the Employees Demographic Profile

Grouping Variables		SD	Mean	p-value	Interpretation
Age	20 – 29 years old	0.462	3.55	.264	Not Significant
	30 – 39 years old	0.416	3.43		
	40 years old and above	0.442	3.38		
Sex	Male	0.440	3.55	.539	Not Significant
	Female	0.451	3.41		
Position	Staff	0.456	3.52	.033	Significant
	Team Leader	0.421	3.25		
	Supervisor	0.253	3.67		
Years in Service	Manager	.	3.80	.490	Not Significant
	5 years and below	0.464	3.52		
	6 – 10 years	0.412	3.50		
	11 years and above	0.452	3.38		

Educational Attainment	Bachelor Degree	0.448	3.48		
	High School	0.230	3.86	.050	Significant
	Diploma				
	Hotel A	0.436	3.58		
Hotel Checked-in	Hotel B	0.439	3.49	.716	Not Significant
	Hotel C	0.422	3.46		
	Hotel D	0.489	3.45		

Table 23 demonstrates the considerable disparities in the degree of technological integration in detection among hotels in Bacolod City when categorized according to the demographic profile of the staff. The results show that position ($p = .033$) and educational attainment ($p = .050$) had significant differences because their p -values came out equal or below the 0.05 level of significance. This indicates that employees' opinions of detection-related technological integration differ by their organizational position and educational background. Managers had the highest mean score ($M = 3.80$), followed by supervisors ($M = 3.67$) and the lowest mean was reached by team leaders ($M = 3.25$). Similarly, respondents with a high school diploma reported a higher mean score ($M = 3.86$) than those with a bachelor's degree ($M = 3.48$). On the contrary, age ($p = .264$), sex ($p = .539$), years in service ($p = .490$), and hotel checked-in ($p = .716$) did not show significant variations, demonstrating that opinions of detection technologies are typically similar across various demographic categories.

The results show that the education and organizational responsibilities of the employees influence their perception of the efficiency and use of the technology connected to detection in hotel operations. They are also more exposed to monitoring systems, security technologies, operational dashboards and data-driven decision-making tools and appreciate the value of such products more. The large disparity based on educational attainment may suggest differences in familiarity, exposure, or contact with technology systems. On the contrary, the absence of substantial disparities in terms of age, sex, years in service and hotel affiliation indicates that detecting technologies are deployed and experienced homogeneously among the participating facilities. The uniformity indicates the rising standardization of technology-enabled monitoring and operational control systems in the hotel industry.

Recent research emphasized the importance of organizational position and employee characteristics in technology acceptance and utilization, which supports the findings. According to Vial (2021), the function of employees within firms plays a crucial part in how they perceive and adopt digital technologies, as different roles entail different duties and access to technological resources. Likewise, Jöhnk et al. (2022) revealed that managerial personnel, in general, demonstrate stronger engagement with digital technologies as they rely on technological systems for monitoring, planning, and operational control. The employees' educational backgrounds and their job responsibilities have a major influence on their comprehension and use of hotel technologies in the hospitality business Alrawadieh et al. (2023). Moreover, Hassan and Soliman (2024) revealed that organizational hierarchy and technology exposure are still important factors that affect employees' perceptions of digital innovation and technology effectiveness in hospitality organizations. These investigations confirm the current findings that the job and educational attainment have a substantial impact on the employees' impression of detection-related technological integration.

Table 24 shows the considerable disparities in the extent of technology integration in terms of participation when categorized according to the employees' demographic profile. The results indicate that only position ($p = .018$) had a meaningful difference, since the p -value was less than the 0.05 level of significance.

In terms of position classifications, the mean score of managers was the greatest ($M = 3.90$) followed by supervisors ($M = 3.61$) and staff members ($M = 3.55$), however the mean score of team leaders was the lowest ($M = 3.22$). On the contrary, age ($p = .103$), sex ($p = .179$), years in service ($p = .486$), educational attainment ($p = .110$), and hotel checked-in ($p = .331$) showed no significant differences.

Table 24 Differences of the Extent of Technological Integration in terms of Engagement when grouped according to the Employees demographic profile

Grouping Variables		SD	Mean	p-value	Interpretation
Age	20 – 29 years old	0.464	3.58	.103	Not Significant
	30 – 39 years old	0.449	3.42		
	40 years old and above	0.466	3.36		
Sex	Male	0.438	3.57	.179	Not Significant
	Female	0.491	3.40		
Position	Staff	0.470	3.55	.018	Significant
	Team Leader	0.392	3.22		
	Supervisor	0.376	3.61		
	Manager	.	.390		
Years Service	5 years and below	0.474	3.53	.486	Not Significant
	6 – 10 years	0.26	3.50		
	11 years and above	0.502	3.38		
Educational Attainment	Bachelor Degree	0.466	3.49	.110	Not Significant
	High School Diploma	0.288	3.83		
	Hotel A	0.361	3.65		
Hotel Checked-in	Hotel B	0.448	3.51	.331	Not Significant
	Hotel C	0.447	3.47		
	Hotel D	0.542	3.43		

The results suggest that employees' opinions of engagement-related technology integration are generally similar irrespective of age, gender, tenure, education, and hotel affiliation, but differ according to organizational position. The findings imply that employees' organizational positions are important in their opinions of the significance of technology in enabling involvement in hotel operations. Managers and supervisors may have more interaction with communication platforms, collaboration technologies, digital reporting systems and employee engagement tools, leading to stronger appreciation of the benefits of technology integration. Their tasks frequently demand a higher dependence on technology to organize teams, track performance and foster communication across departments. The lack of substantial differences in other demographic characteristics suggests that engagement-related technology are generally available and used across the company. This portrays a workplace environment where digital tools are integrated into daily operations and contribute to communication, cooperation and employee participation, irrespective of personal qualities.

The findings are consistent with other studies highlighting the influence of organizational status on technology-enabled employee engagement. Employees who hold leadership and administrative positions are more likely to find value in digital engagement technology due to their higher responsibility for communication, coordination, and organizational decisions Attaran et al. (2022). In a similar vein, Bondarouk and Brewster (2023) noted that managers generally exhibit stronger involvement with digital workplace platforms because of their strategic and supervisory duties. In the hospitality business, Anand et al. (2024) found that leadership roles play a major role in views of technological efficacy in staff engagement and collaboration. Furthermore, Caligiuri et al. (2025) found that digital engagement programs are most effective when backed by leadership participation and technology-driven communication techniques. These research reinforce the present findings that organizational position is an important element influencing employees' views of engagement-related technological integration.

Table 25 shows the considerable disparities in the level of technological integration as agility when grouped by the demographic profile of the personnel. The results indicate that position ($p = .018$) and educational attainment ($p = .019$) had significant differences because their p-values were below than the 0.05 level of significance.

Table 25 Differences of the Extent of Technological Integration in terms of Agility when grouped according to the Employees Demographic Profile

Grouping Variables		SD	Mean	p-value	Interpretation
Age	20 – 29 years old	0.477	3.54	.257	Not Significant
	30 – 39 years old	0.465	3.41		
	40 years old and above	0.491	3.37		
Sex	Male	0.450	3.53	.237	Not Significant
	Female	0.509	3.40		
Position	Staff	0.471	3.54	.018	Significant
	Team Leader	0.444	3.18		
	Supervisor	0.419	3.50		
	Manager	.	3.80		
Years Service	5 years and below	0.490	3.48	.659	Not Significant
	6 – 10 years	0.417	3.52		
	11 years and above	0.539	3.39		
Educational Attainment	Bachelor Degree	0.478	3.47	.019	Significant
	High School Diploma	0.173	3.90		
	Hotel A	0.443	3.57		
Hotel Checked-in	Hotel B	0.456	3.49	.785	Not Significant
	Hotel C	0.490	3.43		
	Hotel D	0.514	3.46		

The position category with the highest mean score was managers ($M = 3.80$), followed by staff ($M = 3.54$), supervisors ($M = 3.50$), and team leaders ($M = 3.18$). Similarly, respondents with a high school education reported a higher mean score ($M = 3.90$) compared to those with a bachelor's degree ($M = 3.47$). However, there was no significant difference in age ($p = .257$), gender ($p = .237$), years of service ($p = .659$), and hotel checked-in ($p = .785$). These findings reveal that opinions of technological integration related to agility are generally consistent across most demographic categories except when employees are classified according to position and educational level.

The findings imply that employees' organizational responsibilities and educational backgrounds shape their perceptions of technology's ability to enhance organizational agility. Managers might show greater perceptions because they are directly involved in decision-making processes that need quick access to information, swift answers and adaptable methods. Similarly, differences in education may influence how familiar one is with technological tools and one's ability to make the most of these tools in dynamic work environments. The lack of substantial disparities regarding age, female, years in service and hotel affiliation implies that agility-related technologies are broadly adopted in hotel operations and are generally evaluated similarly across these demographic categories. This is reflective of the increased dependence of hospitality firms on technology to enhance flexibility, responsiveness and operational agility.

The findings are consistent with other studies that show the link between technology adoption and organizational agility. Appio et al. (2021) observed that technical skills can considerably increase organizational agility by allowing for more rapid reactions to operational difficulties and market changes. Similarly, Melián-González and Bulchand-Gidumal (2022) stated that digital technologies promote organizational adaptation and reactivity, especially in service-oriented industries such as hospitality. In a digital transformation study, Nasiri et al. (2023) found that employees' organizational positions and technology competencies shape their perceptions of agility and innovation. Verma and Gustafsson (2024) further pointed out that technology-enabled agility enables hospitality firms to respond swiftly to evolving client expectations, enhancing operational performance and service efficacy. The investigations substantiate

the present conclusions that position and educational attainment have a substantial influence on employees' views of agility-related technological integration.

Table 26 Differences of the Extent of Technological Integration in terms of Continuity when grouped according to the Employees Demographic Profile

Grouping Variables		SD	Mean	p-value	Interpretation
Age	20 – 29 years old	0.489	3.52	.136	Not Significant
	30 – 39 years old	0.479	3.33		
	40 years old and above	0.551	3.36		
Sex	Male	0.503	3.47	.871	Not Significant
	Female	0.489	3.39		
Position	Staff	0.485	3.51	.011	Significant
	Team Leader	0.449	3.12		
	Supervisor	0.502	3.50		
Years in Service	Manager	.	3.80	.600	Not Significant
	5 years and below	0.493	3.47		
	6 – 10 years	0.489	3.44		
Educational Attainment	11 years and above	0.542	3.34	.002	Significant
	Bachelor Degree	0.485	3.43		
	High School Diploma	0.000	4.00		
Hotel Checked-in	Hotel A	0.486	3.57	.569	Not Significant
	Hotel B	0.509	3.40		
	Hotel C	0.517	3.40		
	Hotel D	0.484	3.43		

Table 26 shows the major variances of the extent of technological integration in terms of continuity when classified according to the employees' demographic profile. The results revealed that position ($p = .011$) and educational attainment ($p = .002$) were significantly different with the p-values below the 0.05 level of significance. In the position category, managers scored the highest ($M = 3.80$), followed by staff members ($M = 3.51$), and supervisors ($M = 3.50$), with team leaders having the lowest mean score ($M = 3.12$). Similarly, the respondents with a high school education recorded the highest mean score ($M = 4.00$) than those with a bachelor's degree ($M = 3.43$). However, no significant differences were seen for age ($p = .136$), sex ($p = .871$), years in service ($p = .600$), and hotel checked-in ($p = .569$). These results demonstrate that the opinions on technology integration in terms of continuity differ by the role and education level of employees, but are similar across other demographic factors.

The findings suggest that organizational responsibilities and educational background affect employees' perceptions of technology in supporting operational continuity. Managers' perceptions may be more positive since they are actively engaged in ensuring the smooth running of operations, resource management and preserving service consistency despite operational difficulties. Differences in educational attainment similarly may influence how employees comprehend the role of technology systems in company continuity, information management, and service reliability. The absence of substantial variations on age, sex, years in service and hotel affiliation indicates that continuity-related technologies are widely embedded in hotel operations and are experienced similarly by employees regardless of these factors. This consistency is a manifestation of the growing dependence of hospitality firms on digital systems to maintain operational performance and organizational resilience.

The results are consistent with other research that emphasize the importance of technology in the context of business continuity and organizational resilience. Hanelt et al. (2021) report that digital technologies help maintain organizational continuity by facilitating a continuous flow of information, coordinated operations, and adaptive reactions to disturbances. Likewise, Erol et al. (2022) observed that technology-driven

continuity systems enhance the resilience of organizations and contribute to maintaining operational stability in volatile business contexts. In the hospitality industry, El-Said and Aziz (2023) pointed out that digital infrastructure is vital in delivering seamless service delivery and operational performance. Secondly, Aburumman, (2025) found that successful technological integration improves business continuity through increased preparedness, less service interruptions, and sustainable organizational performance. These studies complement the present results showing that position and education level greatly affect employees' views on technology integration in terms of continuity.

Table 27 Differences in the Extent of Green Adoption Practices in terms of Environmental factors when grouped according to the Guest Demographic Profile

Grouping Variables

Grouping Variable	Category	SD	Mean	p-value	Interpretation
Sex	Male	0.572	3.43	.078	Not Significant
	Female	0.504	3.39		
Age	18–29 years old	0.508	3.41	.034	Significant
	30–39 years old	0.413	3.53		
	40 years old and above	0.875	2.96		
Purpose of Travel	Work-related Travel	0.435	3.47	.718	Not Significant
	Family-related Travel	0.622	3.41		
	Personal/Recreational Travel	0.528	3.39		
Type of Guest	Local	0.467	3.44	.086	Not Significant
	Foreign	0.907	3.26		
	Others	0.755	3.15		
Frequency of Visit	First-time Visitors	0.437	3.42	.035	Significant
	Occasional Guest	0.687	3.32		
	Frequent/Repeat Guest	0.358	3.75		
	Others	0.548	3.33		
Hotel Checked-in	Hotel A	0.413	3.44	.843	Not Significant
	Hotel B	0.558	3.42		
	Hotel C	0.467	3.32		
	Hotel D	0.714	3.33		

Table 27 demonstrates the statistically significant differences in the magnitude of green adoption practices in relation to environmental parameters according to the demographic profile of the guests. The results show that there is a significant difference in age ($p = .034$) and frequency of visit ($p = .035$) as their p-value is below than the 0.05 level of significance. Guests aged 30-39 years scored the greatest mean score ($M=3.53$) among the age categories, while guests aged 40 years and above scored the lowest mean score ($M=2.96$).

In terms of frequency of visit, the highest mean score ($M = 3.75$) was recorded by frequent or repeat guests, while the lowest mean score ($M = 3.32$) was recorded by infrequent guests. On the other hand, sex ($p = .078$), purpose of stay ($p = .718$), kind of guest ($p = .086$) and hotel checked-in ($p = .843$) did not present significant differences. The data show that guests' opinion of environmental green adoption policies varies by age and frequency of visit, but is largely consistent by gender, trip purpose, guest classification and hotel association. Results indicate that guests' view of environmental sustainability practices is influenced by knowledge and experience with hotel operations. "Repeat or frequent guests may be more attuned to and appreciate environmental initiatives such as waste management programs, energy conservation measures, and eco-friendly operational practices, thus giving higher ratings." Differences among age groups may also be indicative of environmental knowledge, sustainability expectations, and personal attitudes surrounding environmental responsibility. The lack of substantial disparities in other demographic characteristics suggests that the hotels participating in the study consistently implement environmental sustainability programs and that these are widely accepted by a variety of customers. These results underscore the need for visible, well-communicated environmental programs that are valued by both first-time and recurring guests.

Results agree with other studies that pointed out the role of guests' characteristics on the impression of environmental sustainability in hospitality contexts. Guests who are exposed to more hotel sustainability programs tend to show more support for environmental activities and higher ratings of green hotel operations Line and Hanks, (2021). Similarly, Trang et al. (2022) found that repeat guests are more likely to identify and appreciate environmental sustainability efforts due to their accumulation of experiences with hotel operations. In another study, Sürücü et al. (2023) have shown that there are age-related changes that significantly affect environmental attitudes and perceptions of sustainable hospitality practices. Additionally, Baloglu and Rahimi (2024) reported that guest experience and environmental consciousness are major predictors of guest perception and evaluation of sustainability initiatives in hotel settings. These research reflect the current findings that age and frequency of visit have substantial impact on guests' perceptions of environmental green adoption strategies.

Table 28 shows the considerable disparities in the adoption of green practices based on social factors, stratified by demographic profile of the guests. Results suggest no statistically significant variations in guests' perceptions of social green adoption methods based on any of the demographic characteristics. Specifically, age ($p = .079$), sex ($p = .092$), purpose of stay ($p = .875$), kind of guest ($p = .095$), frequency of visit ($p = .082$), and hotel checked-in ($p = .791$) all had p -values greater than the 0.05 level of significance. The greatest mean score ($M = 3.57$) was reported for guests aged 30–39 years and the highest mean score across visit groups ($M = 3.70$) was for frequent or repeat guests.

Table 28 Differences in the Extent of Green Adoption Practices in terms of Social factors when grouped according to the Guest Demographic Profile

Grouping Variable	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.4855	3.44	.079	Significant
	30–39 years old	0.427	3.57		
	40 years old and above	0.610	3.09		
Sex	Male	0.578	3.43	.092	Not Significant
	Female	0.440	3.43		
Purpose of Stay	Work-related Travel	0.454	3.46	.875	Not Significant
	Family-related Travel	0.515	3.47		
	Personal/Recreational Travel	0.499	3.42		
Type of Guest	Local	0.443	3.46	.095	Not Significant
	Foreign	0.686	3.36		
	Others	0.750	3.19		
Frequency of Visit	First-time Visitors	0.424	3.45	.082	Not Significant
	Occasional Guest	0.571	3.37		
	Frequent/Repeat Guest	0.440	3.70		
	Others	0.537	3.34		
Hotel Checked-in	Hotel A	0.425	3.42	.791	Not Significant
	Hotel B	0.474	3.47		
	Hotel C	0.414	3.46		
	Hotel D	0.706	3.37		

However, these variations were not statistically significant. Thus, the null hypothesis is supported that guests' impressions of the social aspects of green adoption practices do not vary across demographic factors.

The results show that social sustainability practices are being carried out in a uniform way in the participating hotels and are perceived in a comparable way by different groups of customers. Practices relating to employee welfare, community involvement, ethical conduct, inclusivity and social responsibility appear to be apparent and available to all visitors regardless of age, gender, travel intent, guest categorization, frequency of visit or hotel affiliation. The absence of major disparities shows that hotels have successfully created socially responsible policies that provide a consistent experience to their clients. This consistency is significant because it shows that the social sustainability efforts are not just for a certain client

category, but are recognized widely across the population of guests, thus reinforcing the hotel's image for responsible and inclusive operations.

Findings of this study are reinforced by recent research that emphasize the commonality of social sustainability initiatives in the hospitality industry. Rasoolimanesh et al. (2022) observed that customers tend to appreciate social sustainability initiatives irrespective of their demographic background, especially when such practices are incorporated into the entire service offering. Similarly, Bui et al. (2023) discovered that socially responsible hospitality practices favorably influence guest opinions across different consumer segments, resulting in generally consistent ratings. In a similar vein, a recent study by Sánchez-Cañizares et al. (2024) concluded that social sustainability programs enhance guest experiences across all demographic groups, satisfying core expectations of equity, accountability, and community involvement. Sharma and Gupta (2025) further found that social responsibility programs in hotels are likely to be widely accepted by visitors, decreasing perceptual inequalities across demographic groups. These research corroborate the current findings that social green adoption strategies are perceived positively by guests regardless of their demographic profile.

Table 29 Differences in the Extent of Green Adoption Practices in terms of Economic factors when grouped according to the Guest Demographic Profile

Grouping Variable	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.501	3.43	.070	Not Significant
	30–39 years old	0.456	3.47		
	40 years old and above	0.603	3.01		
Sex	Male	0.597	3.40	.095	Not Significant
	Female	0.454	3.42		
Purpose of Stay	Work-related Travel	0.447	3.43	.861	Not Significant
	Family-related Travel	0.502	3.44		
	Personal/Recreational Travel	0.530	3.40		
Type of Guest	Local	0.469	3.44	.126	Not Significant
	Foreign	0.625	3.31		
	Others	0.746	3.18		
Frequency of Visit	First-time Visitors	0.427	3.42	.180	Not Significant
	Occasional Guest	0.572	3.37		
	Frequent/Repeat Guest	0.458	3.65		
	Others	0.614	3.32		
Hotel Checked-in	Hotel A	0.428	3.40	.593	Not Significant
	Hotel B	0.479	3.45		
	Hotel C	0.446	3.44		
	Hotel D	0.728	3.31		

Table 29 shows the considerable difference in the amount of green adoption practices in terms of economic considerations when categorized according to guests' demographic profile. The results indicated no statistically significant differences across demographic characteristics. Age ($p = .070$), sex ($p = .095$), purpose of stay ($p =$

.861), kind of guest ($p = .126$), frequency of visit ($p = .180$) and hotel checked-in ($p = .694$) all had p-values larger than the 0.05 level of significance. The greatest mean score was recorded for the age group 30–39 years ($M = 3.47$), among the purposes of stay, the highest mean was for family connected travelers ($M = 3.44$) and the highest mean score was recorded for frequent or repeat guests ($M = 3.65$). However, these variations were not statistically significant. Thus, the null hypothesis is accepted, which indicates that the guests see the economic aspects of green adoption practices roughly similarly despite the visitors' demographic characteristics.

The results indicate that the economic sustainability practices undertaken by the hotels surveyed are perceived in a similar fashion by the different clusters of customers. Practices relating to resource efficiency, cost-effective operations, sustainable procurement, and long-term financial responsibility appear to be

visible independently of guests' age, gender, trip purpose, guest classification, frequency of visit, or hotel affiliation. This lack of statistically significant variances suggests that the economic sustainability initiatives of the hotel are embedded in the hotel's operations in such a way as to deliver a consistent guest experience. The consistency is crucial because it shows that the economic sustainability initiatives are not merely internal management strategies, but are visible and appreciated by a wide spectrum of customers. Such findings suggest that hotels have been able to incorporate economic sustainability into their service delivery and at the same time preserve excellent visitor evaluations.

Recent studies further corroborate the finding that guests tend to evaluate economic sustainability measures similarly across demographic groups when such practices are effectively integrated into hotel operations. Mensah and Dei Mensah (2021) discovered that sustainable economic strategies favorably influence guest evaluations of hotel performance regardless of consumer demographics. Likewise, Han et al. (2022) also noted that guests usually acknowledge the advantages of resource-efficient and economically viable hotel operations leading to homogenous ratings by visitor categories. Another study by Pérez-Rodríguez and del Bosque (2023) showed that economic sustainability activities foster favorable customer attitudes, as they reflect organizational accountability and long-term dedication to quality service. Also, Alananzeh et al. (2024) found that guests are increasingly preferring hotels that mix financial sustainability with service quality, thereby creating generally positive views across demographic segments. The research back the current findings that the perception of economic green adoption practices by the guests is the same irrespective of their demographic profile.

Table 30 Differences in the Extent of Technological Integration in terms of Detections of Hotels in Bacolod when grouped according to the Guest Demographic Profile

Grouping Variable	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.499	3.40	.623	Not Significant
	30–39 years old	0.580	3.47		
	40 years old and above	0.456	3.27		
Sex	Male	0.612	3.40	.916	Not Significant
	Female	0.440	3.39		
Purpose of Stay	Work-related Travel	0.483	3.43	.789	Not Significant
	Family-related Travel	0.493	3.43		
	Personal/Recreational Travel	0.517	3.37		
Type of Guest	Local	0.480	3.41	.199	Not Significant
	Foreign	0.404	3.51		
	Others	0.751	3.18		
Frequency of Visit	First-time Visitors	0.456	3.39	.137	Not Significant
	Occasional Guest	0.575	3.36		
	Frequent/Repeat Guest	0.412	3.66		
	Others	0.543	3.33		
Hotel Checked-in	Hotel A	0.442	3.37	.216	Not Significant
	Hotel B	0.422	3.47		
	Hotel C	0.468	3.43		
	Hotel D	0.737	3.25		

Table 30 shows the statistical disparities in the level of technology integration in terms of detection across hotels in Bacolod City when classified according to the demographic profile of the customers. The results suggest that there were no statistically significant differences seen across any of the demographic characteristics. Specifically, age ($p = .623$), sex ($p = .916$), purpose of stay ($p = .789$), kind of guest ($p = .199$), frequency of visit ($p = .137$), and hotel checked-in ($p = .216$) were all above the 0.05 level of significance. Although the greatest mean score was observed among guests aged 30–39 years ($M = 3.47$), foreign guests were guests with the highest mean score ($M = 3.51$), and frequent or repeat guests were guests with the highest mean score ($M = 3.66$), these differences were not statistically significant. Therefore, the null hypothesis is accepted which indicates the view of guests on technology integration connected to detection is

generally similar independent of the demographic features.

The results show that the detection-related technologies are widely adopted and experienced in the participating hotels. The deployment of these technologies, e.g. surveillance systems, monitoring tools, security mechanisms, and operational tracking systems, seems to be equally accessible and visible to visitors regardless of their age, gender, purpose of travel, guest classification, frequency of visit or hotel association. There were no significant differences in the experiences of different demographic groups, which suggests that hotels have been successful in standardizing the deployment of detection technologies. This consistency is beneficial as it promotes impressions of safety, operational efficiency and technology reliability, important aspects influencing guest confidence and happiness.

These findings are in line with recent research which has shown a widespread acceptability and a consistent impression of technology-enabled monitoring systems in hospitality environments. Ivanov and Webster (2021) discovered that hotel technologies are generally perceived positively by visitors regardless of demographic background, as long as they promote security, convenience and operational efficiency. Similarly, Tussyadiah (2022) discovered that the deployment of technology-assisted monitoring and detection systems plays a role in boosting guest trust and service quality without creating notable perceptual gaps amongst customer segments. Yet another study by Pillai and Sivathanu (2023) found that smart hospitality technologies are becoming regular aspects in hotel operations and so visitor assessments are pretty similar. Koo and Gretzel (2024) further stress that detection and monitoring technologies help operational excellence and visitor confidence, and they are generally perceived positively across different types of hotel guests. These investigations reflect the present findings that the visitors are similar in their perception of detection-related technological integration independent of their demographic profile.

Table 31 Differences in the Extent of Technological Integration in terms of Engagement of Hotels in Bacolod when grouped according to the Guest Demographic Profile

Grouping Variable	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.495	3.42	.788	Not Significant
	30–39 years old	0.586	3.48		
	40 years old and above	0.465	3.33		
Sex	Male	0.621	3.40	.133	Not Significant
	Female	0.425	3.43		
Purpose of Stay	Work-related Travel	0.462	3.41	.557	Not Significant
	Family-related Travel	0.435	3.50		
	Personal/Recreational Travel	0.526	3.39		
Type of Guest	Local	0.471	3.44	.166	Not Significant
	Foreign	0.472	3.44		
	Others	0.751	3.19		
Frequency of Visit	First-time Visitors	0.454	3.42	.354	Not Significant
	Occasional Guest	0.553	3.39		
	Frequent/Repeat Guest	0.460	3.63		
	Others	0.559	3.37		
Hotel Checked-in	Hotel A	0.444	3.40	.107	Not Significant
	Hotel B	0.428	3.51		
	Hotel C	0.444	3.43		
	Hotel D	0.732	3.28		

Table 31 shows the considerable variation in the level of technological integration in terms of interaction among the hotels in Bacolod City when classified according to the demographic profile of the customers. The results reveal that none of the demographic characteristics had statistically significant differences. In particular, the p-values of age ($p = .788$), sex ($p = .133$), purpose of stay ($p = .557$), type of guest ($p = .166$), frequency of visit (p

$= .354$), and hotel checked-in ($p = .107$) were all greater than the 0.05 level of significance. Guests aged 30–

39 years earned the highest mean score ($M = 3.48$), and among purpose-of-stay categories, the highest mean score ($M = 3.50$) was acquired by family-related travelers, while the highest mean score ($M = 3.63$) was gained by frequent or repeat guests. However, these differences were not statistically significant. Hence, the null hypothesis is accepted showing that visitors have similar judgments of engagement-related technological integration across demographic factors.

The results show that all demographic groups of guests experience engagement-related technologies consistently. All digital communication platforms, booking systems, mobile applications, automated customer service tools and other engagement technologies seem to be successfully integrated into hotel operations and are viewed similarly by guests regardless of age, gender, purpose of travel, guest classification, frequency of visit or hotel affiliation. This consistency demonstrates that hotels have successfully used technology-driven engagement tactics that improve communication, accessibility and contact with guests. The absence of major disparities suggests that the engagement technologies have become a common feature of the hospitality experience and contribute to a shared excellent guest experience.

The findings are reinforced by recent research that show the increasing use of digital interaction tools in hotel management. Hollebeek et al. (2022) demonstrated that technology-enabled interaction systems had favorable effects on guest experience and customer satisfaction across different customer segments. Likewise, Wang et al. (2023) found that digital engagement tools promote communication and interaction between hotels and guests and produce consistently positive ratings across all demographic characteristics. In a similar vein, Fan et al. (2024) reported that individualized digital engagement technologies lead to better customer experiences and enhanced guest engagement within the hospitality sector. Moreover, Kim and Lee (2025) pointed out that engagement-oriented technologies offer smooth customer experiences and improve customer loyalty, resulting in hotel guests' more positive opinions. These research confirm the current findings that guests view the technology integration related to involvement in a comparable fashion, regardless of their demographic profile.

Table 32 demonstrates the notable disparities on the extent of technological integration in terms of agility across hotels in Bacolod City when categorized according to the guests' demographic profile. The results revealed no statistically significant differences among the demographic characteristics. Specifically, age ($p = .826$), sex ($p = .241$), purpose of stay ($p = .411$), kind of guest ($p = .225$), frequency of visit ($p = .494$) and hotel checked-in ($p = .258$) all had p -values greater than the 0.05 level of significance. The highest mean score was recorded yguests aged 30-39 years ($M = 3.43$). Family-related travelers obtained the highest mean among purpose of stay categories ($M = 3.50$) and frequent or repeat guests registered the highest mean score ($M = 3.55$).

Table 32 Differences in the Extent of Technological Integration in terms of Agility of Hotels in Bacolod when grouped according to the Guest Demographic Profile

Grouping Variables	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.499	3.41	.826	Not Significant
	30–39 years old	0.609	3.43		
	40 years old and above	0.453	3.30		
Purpose of Stay	Personal/Recreational Travel	0.543	3.37	.241	Not Significant
Type of Guest	Local	0.480	3.42	.411	Not Significant
	Foreign	0.470	3.41		
	Others	0.750	3.19		
Frequency of Visit	First-time Visitors	0.454	3.40	.225	Not Significant
	Occasional Guest	0.527	3.43		
	Frequent/Repeat Guest	0.507	3.55		
	Others	0.606	3.31		
Hotel Checked-in	Hotel A	0.436	3.38	.494	Not Significant
	Hotel B	0.429	3.51		

	Hotel C	0.430	3.40		
	Hotel D	0.765	3.24		

These differences were not statistically significant. Thus, the null hypothesis is accepted, suggesting that visitors have identical judgments regarding agility-related technology integration independent of their demographic features.

The results show that the agility-related technologies are well integrated in the participating hotels and are similarly perceived by the customers with varied demographic backgrounds. Technological agility refers to a hotel's ability to swiftly adapt to guest needs, operational modifications, and service requirements through the use of digital systems and innovative technologies. The insignificant variations show that customers generally feel the benefits of technology responsiveness, flexibility, and adaptation independent of age, gender, purpose of trip, guest classification, frequency of visit, or hotel association. This consistency is a result of the effective adoption of technology-driven procedures, which enable hotels to run their operations efficiently and offer timely services to their clients.

The findings are backed up by subsequent research that emphasize the impact of technology in boosting organizational agility in hospitality firms. Melián-González and Bulchand-Gidumal (2022) indicate that digital technologies promote organizational reactivity and adaptability, helping hospitality firms better meet client needs. Nasiri et al. (2023) also stated that technological integration aids in enhancing organizational agility through quicker decision-making, increased communication, and operational flexibility. In another study, Verma and Gustafsson (2024) observed that agile technological solutions enable hospitality firms to respond to evolving client expectations and dynamic market situations, enhancing service quality and competitiveness. Furthermore, digital agility has emerged as a vital asset for hospitality firms aiming to maintain operational excellence and customer pleasure, as noted by Elia et al. (2025). These investigations reflect the present conclusions that the technological integration of agility is evaluated similarly by guests regardless of their demographic profile.

The major disparities in the extent of technology integration in terms of continuity among the hotels in Bacolod City when categorized according to the guests' demographic profile are shown in Table 33. The results show that sex ($p = .049$) showed a significant difference as its p-value is below than the 0.05 standard of significance. The female guests scored higher ($M=3.42$) than male guests ($M=3.38$), meaning that the female guests were more positive towards the technological integration of continuity.

Table 33 Differences in the Extent of Technological Integration in terms of Continuity of Hotels in Bacolod when grouped according to the Guest Demographic Profile

Grouping Variables	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.519	3.41	.668	Not Significant
	30–39 years old	0.561	3.46		
	40 years old and above	0.396	3.26		
Purpose of Stay	Personal/Recreational Travel	0.565	3.39	.049	Significant
Type of Guest	Local	0.498	3.42	.326	Not Significant
	Foreign	0.324	3.55		
	Others	0.750	3.19		
Frequency of Visit	First-time Visitors	0.466	3.41	.166	Not Significant
	Occasional Guest	0.536	3.40		
	Frequent/Repeat Guest	0.413	3.65		
	Others	0.643	3.30		
Hotel Checked-in	Hotel A	0.439	3.40	.175	Not Significant
	Hotel B	0.459	3.50		
	Hotel C	0.436	3.40		
	Hotel D	0.785	3.27		

Sex	Male	0.653	3.38
	Female	0.432	3.42
Purpose	Work-related Travel	0.452	3.36
	Family-related Travel	0.405	3.52

But age ($p=.668$), purpose of stay ($p=.326$), kind of guest ($p=.166$), frequency of visit ($p=.175$) and hotel checked-in ($p=.709$) were not significantly different. Among the groupings the foreign guests had the greatest mean score (3.55) while the guests under “Others” had the lowest mean score (3.19). Overall, the results reveal that the visitors have similar perceptions of technology integration related to continuity, except when grouped by sex.

The results imply that the technology systems enabling service continuity, operational reliability and seamless customer experiences are consistently used across the hotels studied. The large disparity by sex could imply different expectations, experiences or degree of appreciation of technology-enabled continuity services. Ladies may be more concerned about things like consistent service, dependable digital platforms, and hotel services that are always available. The absence of substantial variations for the other demographic categories indicates that technology associated to continuity are widely available and that most guests have similar experiences. This constancy suggests the hotels’ capacity to sustain reliable technology supported operations independent of the characteristics of the guests.

These findings are backed by recent research demonstrating the relevance of technical continuity in increasing visitor experiences and operational reliability. Magnus and Celuch (2021) concluded that seamless digital service delivery is an important factor in client satisfaction as it provides consistent and uninterrupted hospitality experiences. Similar results were reported with technology-enabled service continuity, which was found to enhance consumer trust and perceptions of service reliability across hospitality contexts Kabadayi et al. (2022).

In a similar study, Sharma et al. (2023) stressed the importance of stable digital infrastructures in increasing customer trust and improving overall service assessments. Moreover, Buhalis and Moldavska (2024) found that continuity-oriented technological solutions are essential for service consistency and operational resilience, particularly in highly competitive hospitality settings. These studies are supportive with the present findings that guests usually have a positive view of the technology integration associated to continuity with only slight differences across demographic groups.

Table 34

Grouping Variables	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.483	3.09	.230	Not Significant
	30–39 years old	0.457	3.26		
	40 years old and above	0.476	2.91		
Sex	Male	0.540	3.15	.009	Significant
	Female	0.450	3.08		
Purpose of Stay	Work-related Travel	0.450	3.11	.329	Not Significant
	Family-related Travel	0.431	3.20		
	Personal/Recreational Travel	0.506	3.07		
Type of Guest	Local	0.476	3.11	.347	Not Significant
	Foreign	0.493	3.21		
	Others	0.534	2.95		
Frequency of Visit	First-time Visitors	0.433	3.11	.322	Not Significant
	Occasional Guest	0.541	3.08		
	Frequent/Repeat Guest	0.406	3.29		
	Others	0.550	3.02		
Hotel Checked-in	Hotel A	0.426	3.11	.709	Not Significant

	Hotel B	0.541	3.08		
	Hotel C	0.406	3.29		
	Hotel D	0.550	3.02		

The results showed a significant difference for sex ($p = .009$) because the p-value was below than the 0.05 standard of significance. Males had a higher mean score ($M = 3.15$) than females ($M = 3.08$) suggesting that the physical features of hotel services were more favorably rated by males. On the other hand, age ($p=.230$), purpose of stay ($p=.329$), kind of guest ($p=.347$), frequency of visit ($p=.322$) and hotel checked-in ($p=.709$) were found to have no significant differences. Among the categories, guests aged 30-39 years recorded the greatest mean score ($M = 3.26$), while guests aged 40 years and above obtained the lowest mean score ($M = 2.91$). Likewise, O Hotel had the highest mean score among the hotels involved in the study ($M = 3.29$), but Westown Hotel had the lowest mean score ($M = 3.02$). The results suggest that, in general, the views of the physical characteristics of hotel services are similar among customers, when segmented by sex.

The results indicate that the visitors generally rate hotel amenities, equipment, physical appearance and other tangible service aspects in a similar way independent of age, purpose of travel, guest classification, frequency of visit and hotel affiliation. The large sex difference points to the possibility that male and female customers may have different expectations or satisfaction levels regarding the physical characteristics of hotel services. Male guests may place a higher value on specific physical attributes or may have a more favorable view of hotel facilities compared to female guests. However, the absence of substantial disparities among the other demographic characteristics implies that the participating hotels have maintained a largely constant level of physical amenities and service environments for all customers.

Recent studies supporting the findings show the importance of tangibility in hotel guest experience. Tangible service features such as hotel facilities, cleanliness and physical appearance have a substantial effect on guests' views of service quality and satisfaction, according to Dedeoğlu and Boğan (2021). Similarly, Khoa et al. (2022) observed that guests' rating of hotel settings is highly correlated with their overall judgment of service quality, especially when physical amenities are well-maintained and visually attractive. In another study, Albayrak and Caber (2023) pointed out that tangibles are still one of the most obvious markers of hospitality service quality and greatly affect client impressions. Moreover, Baniya and Paudel (2024) found that expenditures in physical infrastructure and facility renovations have a beneficial effect on customer satisfaction and competitive advantage in the hospitality industry. These studies are consistent with the present findings that tangibility remains a significant factor of service quality and is generally viewed favorably by hotel customers.

Table 35 Differences in the Level of Service Quality in terms of Reliability of Hotels in Bacolod City when grouped according to the Guest Demographic Profile

Grouping Variables	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.484	3.38	.621	Not Significant
	30–39 years old	0.498	3.50		
	40 years old and above	0.612	3.33		
Purpose of Stay	Personal/Recreational Travel	0.493	3.36	.060	Significant
Type of Guest	Local	0.479	3.38	.581	Not Significant
	Foreign	0.375	3.59		
	Others	0.641	3.27		
Frequency of Visit	First-time Visitors	0.471	3.37	.251	Not Significant
	Occasional Guest	0.506	3.40		
	Frequent/Repeat Guest	0.439	3.60		
	Others	0.533	3.32		
Hotel Checked-in	Hotel A	0.497	3.389	.306	Not Significant
	Hotel B	0.435	3.54		
	Hotel C	0.456	3.36		
	Hotel D	0.616	3.29		

Table 35 shows the considerable differences on the degree of service quality in terms of reliability of hotels in Bacolod City when categorized according to the guests' demographic profile. The results indicate that there were no significant differences for age ($p = .621$), purpose of stay ($p = .581$), kind of guest ($p = .251$), frequency of visit ($p = .306$) and hotel checked-in ($p = .479$) as the p-values were more than the 0.05 level of significance. The highest mean score was registered by the foreign guests ($M = 3.59$), but the highest mean score, based on the frequency of visit was obtained by frequent or repeat guests ($M = 3.60$) and the highest mean score among the age groups was registered by the guests aged 30–39 years ($M = 3.50$) but these differences were not statistically significant. Similarly, male and female guests reported nearly identical mean scores ($M = 3.39$), suggesting similar attitudes of reliability. The findings overall indicate that the perception of hotel service reliability by the guests is constant across all the demographic categories of the guests.

These data suggest that the hotels under study have managed to sustain reliable and consistent service delivery for different kinds of clients. Reliability is the ability of hotels to offer promised services dependably and accurately. The lack of meaningful variances between demographic groupings suggests that visitors in general experience the same level of dependability regardless of age, gender, purpose of travel, guest classification, frequency of visit, or hotel association. This consistency is vital as reliable service is a key element of consumer pleasure and trust. The results also imply that the hotels have set operational standards that ensure that visitors receive reliable services regardless of their background or travel conditions.

The findings are further confirmed by recent research which emphasize reliability as a dimension of service excellence in the hotel industry. Padma and Ahn (2021) discovered that reliability is still one of the biggest determinants of customer satisfaction and trust in hotels since guests strongly value consistent service performance. Similarly, Ali et al. (2022) found that reliable service delivery had a beneficial influence on customer loyalty and return visitation intentions across different guest categories. Another study by Teeroovengadum and Nunkoo (2023) emphasized that service reliability is a key aspect of ensuring happy experiences among guests, as it reduces uncertainty and increases confidence in hospitality providers. Chiu and Cho (2024) also found that clients tend to consistently rate reliable hotel services regardless of their demographic traits since dependability is a common expectation in the hospitality business. The present findings that reliability is highly valued and consistently recognized among hotel visitors are supported by these investigations.

Table 36 Differences in the Level of Service Quality in terms of Responsiveness of Hotels in Bacolod City when grouped according to the Guest Demographic Profile

Grouping Variables	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.508	3.43	.000	Significant
	30–39 years old	0.454	3.56		
	40 years old and above	0.887	2.67		
Purpose of Stay	Personal/Recreational Travel	0.527	3.37	.414	Not Significant
Type of Guest	Local	0.490	3.43	.662	Not Significant
	Foreign	0.908	3.28		
	Others	0.760	3.18		
Frequency of Visit	First-time Visitors	0.461	3.44	.165	Not Significant
	Occasional Guest	0.676	3.32		
	Frequent/Repeat Guest	0.493	3.60		
	Others	0.570	3.35		
Hotel Checked-in	Hotel A	0.514	3.42	.284	Not Significant
	Hotel B	0.557	3.43		
	Hotel C	0.440	3.40		
	Hotel D	0.713	3.34		
Sex	Male	0.621	3.40		
	Female	0.502	3.41		

	Work-related Travel	466	3.46
Purpose	Family-related Travel	0.676	3.43

Table 36 shows the considerable differences in the level of service quality in the aspect of responsiveness of hotels in Bacolod City when classified according to the demographic profile of the clients. The findings show that there was a significant difference in age ($p = .000$) as its p -value is less than the 0.05 standard of significance. In the age category, guests with 30–39 years had the greatest mean score ($M = 3.56$) while guests with 40 and above years had the lowest mean score ($M = 2.67$). However, there was no significant difference between sex ($p = .414$), purpose of stay ($p = .662$), kind of guest ($p = .165$), frequency of visit ($p = .284$) and hotel checked-in ($p = .915$). However, there was no significant difference in the mean scores between the participating hotels ($M = 3.42$) and between the local guests ($M = 3.43$) and the foreign guests ($M = 3.28$). Therefore, the results imply that judgments of responsiveness vary widely by age, but do not change widely by other demographic characteristics generally.

The data imply that the age effects the way in which guests assess the promptness and willingness of hotel staff to help and resolve customer issues. Guests who are 30–39 years old may have higher expectations about service efficiency and may be more attentive to responsiveness-related aspects of service delivery. However, elder customers may rate responsiveness differently based on their expectations and experiences with service. There were no significant differences in terms of sex, purpose of stay, kind of guest, frequency of visit and hotel affiliation indicating that the hotels involved in the study uniformly deliver quick and responsive services to a wide customer. Such uniformity emphasizes the hotels' dedication to service standards that encourage quick customer service and clear communication.

Recent research stressing the importance of responsiveness to the quality of hospitality service confirm the results. Alnawas and Hemsley-Brown (2021) discovered that fast service delivery and personnel desire to help customers have a substantial impact on guest satisfaction and overall hotel ratings. Likewise, Baniya and Paudel (2022) stated that responsiveness is an important factor in building great guest experiences as it shows the organization's ability to meet the needs of the client in a timely manner. In another study, Rather and Sharma (2023) found that rapid response and effective service recovery procedures improve customer trust and satisfaction among customers with greater service expectations. Moreover, Suhartanto et al. (2024) also shown that responsiveness remains one of the strongest determinants of customer loyalty and positive behavioral intentions at hospitality organizations. These studies confirm current results that responsiveness is an important characteristic of service quality and that age-related changes may influence how guests evaluate responsive service actions.

Table 37 Differences in the Level of Service Quality in terms of Assurance of Hotels in Bacolod City when grouped according to the Guest Demographic Profile

Grouping Variables	Category	SD	Mean	p-value	Interpretation
Age	18–29 years old	0.508	3.42	.000	Significant
	30–39 years old	0.454	3.56		
	40 years old and above	0.887	2.67		
Purpose of Stay	Personal/Recreational Travel	0.676	3.38	.414	Not Significant
Type of Guest	Local	0.490	3.44	.662	Not Significant
	Foreign	0.909	3.38		
	Others	0.760	3.18		
Frequency of Visit	First-time Visitors	0.462	3.43	.165	Not Significant
	Occasional Guest	0.676	3.32		
	Frequent/Repeat Guest	0.493	3.60		
	Others	0.570	3.35		
Hotel Checked-in	Hotel A	0.513	3.42	.284	Not Significant

	Hotel B	0.557	3.43		
	Hotel C	0.440	3.41		
	Hotel D	0.713	3.34		

Sex	Male	0.622	3.40
	Female	0.502	3.41
	Work-related Travel	0.466	3.46
Purpose	Family-related Travel	0.676	3.43

Table 37 demonstrates the substantial disparities in the level of service quality in the aspect of responsiveness of hotels in Bacolod City when classified according to the demographic profile of the visitors. The results indicate that there was a significant difference in age ($p = .000$) because its p -value is less than the 0.05 standard of significance. Among the age groups, guests aged 30-39 years had the greatest mean score ($M = 3.56$) while guests aged 40 years and above had the lowest mean score ($M = 2.67$). However, no significant difference was found between sex ($p = .414$), purpose of stay ($p = .662$), kind of guest ($p = .165$), frequency of visit ($p = .284$) and hotel checked-in ($p = .915$). Although Hotel A had the highest mean score of the participating hotels ($M = 3.42$) and local guests had a higher mean score ($M = 3.43$) than foreign guests ($M = 3.28$), these differences were not statistically significant. Thus, the results show that judgments of responsiveness are significantly different by age, but are largely stable across the other demographic categories.

The results show that age effects the way guests perceive the promptness and readiness of hotel workers to provide assistance and solve customer problems. Guests aged 30–39 years may have higher expectations about service efficiency and may be more attentive to responsiveness-related aspects of service delivery. In the meanwhile, elderly guests may rate responsiveness differently based on their expectations and experiences with service. The absence of statistically significant differences in sex, purpose of stay, kind of guest, frequency of visit and hotel affiliation implies that the hotels involved in this study offer prompt and responsive services for a varied clientele. This consistency is a reflection of the hotels' commitment to maintaining service standards that support timely customer assistance and effective communication.

The results align with other research that emphasize the importance of responsiveness in hospitality service quality. Alnawas and Hemsley-Brown (2021) discovered that fast service delivery and employee readiness to assist customers greatly affect guest satisfaction and overall hotel ratings. Similarly, Baniya and Paudel (2022) mentioned that responsiveness is a vital factor in building great guest experiences as it indicates the organization's ability to fulfill consumer requests in a timely manner. In another study, Rather and Sharma (2023) indicated that fast responses and effective service recovery procedures boost the customer trust and satisfaction among the guests with greater service expectations. In addition, Suhartanto et al. (2024) found that responsiveness is still one of the biggest determinants of client loyalty and positive behavioral intentions in hospitality organizations. These studies confirm the current findings that responsiveness is an important characteristic of service quality and that age-related changes may affect how guests evaluate responsive service actions.

Table 38 Differences in the Level of Service Quality in terms of Empathy of Hotels in Bacolod City when grouped according to the Guest Demographic Profile

Grouping Variables	Category	SD	Mean	p-value	Interpretation
Sex	Male	0.609	3.38		
	Female	0.480	3.38		
Purpose of Stay	Work-related Travel	0.420	3.47		
	Family-related Travel	0.611	3.39		
	Personal/Recreational Travel	0.534	3.35	.389	Not Significant
Age	18–29 years old	0.506	3.40	.005	Significant

	30–39 years old	0.473	3.52		
	40 years old and above	0.737	2.81		
Type of Guest	Local	0.490	3.40	.550	Not Significant
	Foreign	0.704	3.35		
	Others	0.745	3.27		
Frequency of Visit	First-time Visitors	0.449	3.41	.241	Not Significant
	Occasional Guest	0.638	3.29		
	Frequent/Repeat Guest	0.452	3.62		
	Others	0.452	3.34		
Hotel Checked-in	Hotel A	0.467	3.39	.153	Not Significant
	Hotel B	0.543	3.40		
	Hotel C	0.448	3.41		
	Hotel D	0.695	3.29		

Table 38 shows the considerable differences in the level of service quality in terms of empathy of hotels in Bacolod City when classified according to the demographic profile of the clients. The results indicate that age ($p=.005$) had a significant difference since its p -value is less than the 0.05 standard of significance. The greatest mean score was found among guests aged between 30 and 39 years ($M = 3.52$) while guests aged 40 years and above had the lowest mean score ($M = 2.81$) for the age categories. On the other hand, sex ($p = .389$), purpose of stay ($p = .550$), kind of guest ($p = .241$), frequency of visit ($p = .153$) and hotel checked-in ($p = .779$), showed no significant differences.

While local guests had a (almost) comparable mean score ($M = 3.40$) to the foreign guest group ($M = 3.35$) and frequent or repeat guests had the (almost) highest mean score ($M = 3.62$), Hotel C achieved the (almost) highest mean score ($M = 3.41$) among the participating hotels, none of these discrepancies were statistically significant. The results suggest that the guest views of empathy vary with age, but are quite consistent across the other demographic variables.

The results indicate that the age of the guest has an effect on their perception of empathy displayed by hotel workers. Guests aged 30–39 years might feel more valued with customized attention, understanding and specialized care, which could result in higher service quality ratings about empathy. Younger customers can have different expectations in terms of personal contacts and customer service that might explain their relatively lower ratings compared to older guests.

There were no significant differences across sex, purpose of stay, kind of guest, frequency of visit, and hotel affiliation. This suggests that the hotels studied generally deliver similar levels of personalized service and customer care to a wide variety of guests. This consistency is vital because empathy increases client happiness by making consumers feel appreciated, understood and respected throughout their hotel experience.

The relevance of empathy in hospitality service delivery has been highlighted from recent studies and supports the findings. Sharma and Nayak (2021) have observed that individual attention and employee concern are crucial in the emotional reactions of the visitors and the overall satisfaction with the services of a hotel. Similarly, Ariffin et al. (2022) discovered that empathy-related actions like as attentiveness, understanding, and personalized care improve customer evaluations of service quality and loyalty.

In another study, Rather, Hollebeek, and Rasoolimanesh (2023) found that more empathic interactions led to more emotional ties between customers and service providers and this leads to better customer experiences. Choi and Kandampully (2024) also noted that empathy is an important factor influencing client happiness, as it helps to create meaningful and memorable hospitality experiences. These studies support the present results that empathy is highly appreciated by hotel customers and that age differences may alter the perception of this service quality component.

Table 39 Relationship Between Green Adoption Practices and Technological Integration in the perspective of the Employees

Variables	r	p-value	Interpretation	Decision
Green Adoption Practices and Technological Integration	.887	.000	Significant	Reject H_0

Table 39 demonstrates the relationship between green adoption methods and technological integration from the standpoint of the employees. The results show a correlation coefficient of $r = .887$ with a p-value of .000. This shows a very strong positive link between the two variables. Since the p-value is less than the 0.05 level of significance, the link is statistically significant and the null hypothesis is rejected. This research implies that the greater the adoption of green adoption techniques, the higher the tendency of technology integration. The correlation value represents the strength of the relationship between the two variables, showing a strong relationship between sustainability activities and technology usage in the participating hotels.

The findings indicate that technological integration is essential for supporting and increasing green adoption practices within hotel operations. Hotels that invest in technological systems are more likely to adopt sustainable practices in the fields of environmental conservation, resource efficiency, social responsibility, and economic sustainability. Sustainable goals can be met through technological solutions such as energy management systems, automated monitoring tools, digital documentation and smart operational platforms that also improve operational efficiency. The strong positive relationship further implies that organizations pursuing sustainability initiatives can gain significantly by enhancing their technological capabilities, since both elements appear to complement and reinforce each other in achieving organizational effectiveness and long-term competitiveness.

The results are in line with current literature that emphasizes the link between sustainability programs and technical innovation. Digital technologies are important enablers of sustainable organizational practices because they enhance efficiency, reduce waste, and facilitate environmental objectives Centobelli et al. (2021). Similarly, George et al. (2022) mentioned that the technology-driven innovation accelerates the sustainability performance by helping the firms to optimize resources and undertake environmentally responsible operations. In the hospitality industry, technological integration has a vital role in the successful application of green practices by facilitating better monitoring, data management and operational control Yadegaridehkordi et al. 92023). In addition, Buhalis and Leung (2024) emphasized the rising interconnection between digital transformation and sustainability, where technological advances serve as critical enablers of responsible and sustainable hospitality

management. The research support the present findings that higher levels of green adoption practices across hotel enterprises are linked with stronger technological integration.

Table 40 Relationship Between Green Adoption Practices and Technological Integration in the perspective of the Guest

Variables	r	p-value	Interpretation	Decision
Green Adoption Practices and Technological Integration	.884	.000	Significant	Reject H_0

Table 40 presents the guest-level relationship between perceived Green Adoption Practices and perceived Technological Integration. Using 191 guest records, the analysis yielded $r = .884$, $p < .001$, indicating a very strong positive association. Both scores were obtained from the same guest respondents; personnel data were not matched, pooled, or aggregated with these observations. The null hypothesis was therefore rejected.

Table 40 presents the relationship between green adoption practices and technological integration from the guests' perspective. The results indicate a correlation coefficient of $r = .884$ with a p-value of .000, which indicates a very significant positive association between the two variables. The association is statistically

significant because the p-value is smaller than the 0.05 significance level, and we may reject the null hypothesis. This research shows that higher levels of green adoption practices are related to higher levels of technological integration among the participating hotels. The strong correlation implies that hotel guests see sustainability activities and technology deployment as tightly coupled, underscoring the interconnectedness of both organizational practices.

The results indicate that guests view technology as a key enabler of sustainability activities in hotel operations. Hotels that are active in using technology systems such as smart energy management, automated resource monitoring, digital communication platforms and paperless transactions will also likely exhibit better green adoption practices. The favorable and significant association demonstrates the guests' awareness of the contribution of technology for environmental protection, operational efficiency and responsible use of resources. Furthermore, the findings indicate that investments in technological innovation can enhance the visibility and effectiveness of sustainability activities, leading to improved guest views of hotel performance and commitment to sustainable development.

The findings are also confirmed by recent studies emphasizing the connection between technological innovation and sustainability in hospitality firms. According to Rodríguez-Antón and Alonso-Almeida (2021), digital technologies are considerably contributing to the effective adoption of sustainable hotel practices by improving resource management and operational efficiency. Similarly, Gössling and Schweiggart (2022) found that technology-enabled sustainability initiatives had a beneficial influence on guest views and support for ecologically responsible hospitality operations. Another study Stylos et al. (2023) found that smart technologies boost the effectiveness of green practices through real-time monitoring, efficient use of resources and better service delivery. Huang and Rust (2024) also noted that the hospitality business is progressively integrating technological advancement with sustainability, producing synergies that improve organizational performance and customer pleasure. These research corroborate the present findings that green adoption practices and technological integration are substantially and significantly associated from the perspective of hotel guests.

Table 41 Regression Analysis of Green Adoption and Technological Integration as Predictors of Service Quality

Predictor	B	SE	β	t	p-value	Interpretation
Constant	0.217	0.093	–	2.340	.020	Significant
Green Adoption	0.668	0.055	0.699	12.076	.000	Significant
Technological Integration	0.244	0.056	0.251	4.342	.000	Significant

The regression analysis of the green adoption strategies and technological integration as determinants of the service quality is presented in Table 41. The results show that green adoption practices ($\beta = 0.699$, $p = .000$) and technological integration ($\beta = 0.251$, $p = .000$) significantly predict service quality, since their p-values were below the 0.05 level of significance. The strongest predictor is green adoption practices which have the greatest standardized beta coefficient ($\beta = 0.699$) and t-value ($t = 12.076$) among the two predictors. The technological integration also considerably affected the model with a beta coefficient of 0.251 and a t-value of 4.342. Additionally, the constant term was statistically significant ($B = 0.217$, $p = .020$). The results reveal that the impacts of green adoption strategies on service quality and technology integration are significant and the former has a higher impact.

The findings suggest that hotels can improve their service quality by increasing their sustainability initiatives and technical capacities. The higher impact of green adoption practices shows that guests and staff value the ecologically responsible, socially conscious, and economically sustainable operations that positively affect their overall evaluation of service quality.

At the same time, technological integration continues to be a key factor in increasing operational efficiency,

service consistency, communication and customer experience. The results show that service quality is not only a function of traditional service delivery but is increasingly a function of an organization's commitment to sustainability and digital innovation. Hotels that succeed in integrating these two strategic areas are more likely to attain higher levels of customer satisfaction and organizational performance.

The findings align with other research that highlight the joint impact of sustainability and technology on improving service quality. Merli et al. (2021) demonstrated that green management techniques considerably positively affect customers' evaluations of hotel service quality by providing corporate accountability and commitment to sustainable development. Likewise, Verma et al. (2022) found that integration of technology improved service delivery through increased responsiveness, efficiency, and customer involvement.

Another study, Kim et al. (2023) found that sustainability activities and digital transformation jointly lead to excellence performance in the hotel industry and customer satisfaction. Besides, Buhalis et al. (2024) stated that hotels that embrace both sustainable practices and sophisticated technologies will have better service quality outcomes, competitive advantage, and long-term organizational performance. These research reinforce the existing conclusions that green adoption practices and technological integration are major determinants of service quality with sustainability practices having a stronger influence.

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

Green Adoption Practices (GAP)

The findings demonstrated that the employees viewed the hotels' Green Adoption Practices on environmental, social and economic considerations to a Very High Extent, meaning that the hotels have a strong commitment to sustainability and responsible operations. The social elements were the greatest among the three criteria, indicating the successful implementation of employee welfare programs, community involvement and socially responsible activities. Significant disparities in green adoption practices were found across employee groups based on age, position, and educational level. In the same vein, there were substantial disparities in the perception of environmental elements among visitors depending on their age and frequency of visit. However, no significant difference was found in social and economic factors based on guest demographic profiles.

Technological Integration (TI)

Results pointed out that hotel employees and guests rated Technological Integration in terms of detection, engagement, agility and continuity to be carried out to a Very High Extent. This implies that hotels effectively use digital systems to facilitate operations, guest engagement, responsiveness and continuity of service. The employees' opinions of technology integration varied significantly by position and educational level, whereas the guests' perceptions were essentially comparable, with only continuity being significantly different based on sex.

Service Quality (SQ)

The results showed that the service quality of the participating hotels was assessed by guests as Very High in reliability, responsiveness, assurance and empathy, and High in tangibility. These results suggest that hotels may be trusted to provide responsive, customer-oriented services. Guests' perceptions of responsiveness, assurance and empathy varied significantly by age and tangibility by sex, but there were no significant changes in dependability across demographic groups.

Relationship and Regression Findings

The results also found a very strong and statistically significant positive correlation between Green Adoption

Practices and Technological Integration from the employee and guest perspectives. This means the more sustainability efforts, the more technological integration. Moreover, the results indicate that both Green Adoption Practices and Technological Integration are significant predictors of Service Quality, however, Green Adoption Practices is a stronger predictor than Technological Integration, suggesting that sustainability initiatives have a greater impact on improving hotel service quality.

CONCLUSION

The study shows that Bacolod City hotels have successfully adopted green practices and technological advances in their operations with the extent of sustainability implementation and technological integration is quite high. In general, the employees and customers perceived that the participating hotels were highly evident in environmental, social and economic sustainability activities and detection, engagement, agility and continuity technology. Similarly, the general service quality was perceived highly, especially with regard to reliability, responsiveness, assurance, and empathy, which all signified the hotels' dedication to providing great client experiences.

The results further show that specific demographic traits affect opinions of sustainability practices, technological integration and service excellence. Age, position, years in service and educational attainment among the personnel were important determinants of chosen parameters of green adoption practices and technological integration. Regarding demographic variables, age was the most important determinant of guests' views of responsiveness, certainty, and empathy, while sex was an important determinant of guests' perceptions of tangibility and technological integration regarding continuity. However, the majority of demographic characteristics did not significantly influence guests' impressions, showing that hotel services and operational methods are generally received in a similar fashion among various consumer groups.

Furthermore, the study also reveals a very strong and significant beneficial association between green adoption practices and technological integration from the standpoint of employees and guests. This suggests that hotels with greater sustainability programs are more likely to have higher levels of technology integration. The findings further validate that green adoption strategies and technological integration are substantial predictors of service quality. The strongest predictor among these was green adoption techniques which points out the relevance of sustainability in increasing the guests' sense of service excellence. Thus, the paper concludes that sustainability and technology are complimentary strategic drivers that greatly contribute to better service quality, organizational effectiveness, customer happiness and long-term competitiveness of the hotel industry.

The study found very strong positive associations between Green Adoption Practices and Technological Integration when analyzed separately among personnel and guests. In the guest sample, both constructs were positively associated with perceived Service Quality in the multiple regression, with Green Adoption Practices showing the larger standardized coefficient. Because all regression variables were reported by the same 191 guests at one point in time, the findings support an association-based interpretation rather than a causal claim about hotel-level effects.

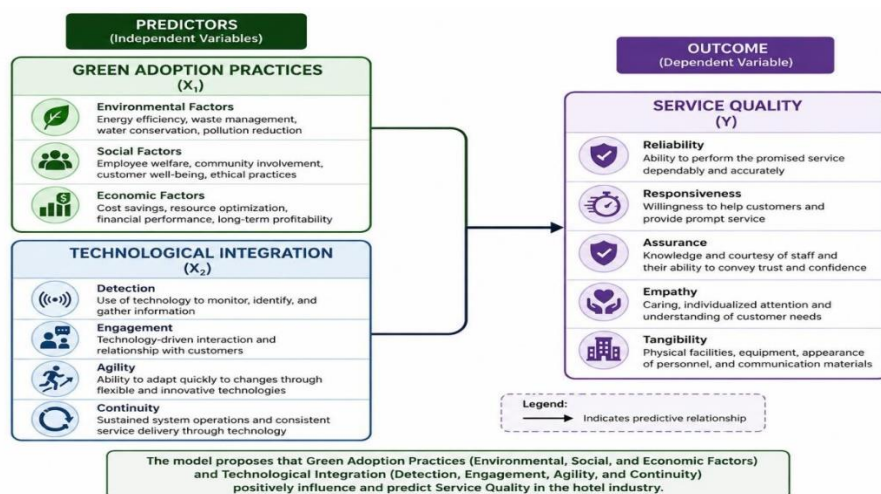
RECOMMENDATIONS

Based on the findings of the study, the following recommendations are offered:

1. Based on the result, environmental practices were rated relatively low among older employees, supervisors and employees with longer years of service, hotel management may carry out regular sustainability orientation and training programs to improve their awareness, participation and commitment to environmental
2. initiatives. The fact that the team leaders gave the lowest ratings to the practices of social and economic sustainability indicates that hotels could increase their engagement in planning, communicating and implementing sustainability to enhance their understanding of initiatives that are socially and economically responsible.

3. Based on the finding the lower perceptions of technology detection were detected among team leaders. Management may provide further training and hands-on exposure to digital monitoring systems and technological tools to increase operational efficiency and decision making.
4. After the outcome, team leaders and specific groups of employees rated the technological involvement lower, hotel managers can provide ongoing training on technology and encourage active participation in digital communication and collaboration platforms.
5. The result that the technological agility obtained substantially lower ratings among team leaders and senior employees can be used by hotels to improve digital skills development programs such as the development of adaptability, innovation, and responsiveness to changing operational demands.
6. The result revealed that the technological integration related to continuity was evaluated lower by team leaders and individuals with more years of service. Management might improve business continuity training, system familiarity and participation in technology-enabled operational planning.
7. According to the result, some hotel establishments had lower mean scores in specific aspects of green adoption and technological integration, hotel management may benchmark successful practices from higher-performing hotels to improve sustainability and digital implementation methods.
8. As the results of the guest groups such as older visitors, occasional guests and other guest groups provided relatively lower evaluations of environmental practices, hotels can increase the visibility of sustainability programs within information materials, digital campaigns and guest participation activities.
9. According to the result of the differences in perceptions across demographic groups, hotels may develop targeted programs which address the specific needs and expectations of different employees and guests to achieve more consistent implementation of green practices and technological integration.
10. In view of the findings, future researchers may conduct similar studies in different locations, include more hotel categories, or explore additional variables that may influence green adoption practices, technological integration, and service quality, thus the need for further validation and expansion of the present findings.
11. Future studies should include more hotels and report the hotel-level sample explicitly; obtain independent operational measures of green practices and technology; use defensible matching or multilevel procedures when connecting employee and guest data; assess common-method bias; and report complete reliability, model-fit, and regression-diagnostic statistics. Longitudinal or quasi-experimental designs are recommended before making causal claims.

Propose Model Of Green Adoption And Technological Integration For Service Quality Improvement



The conceptual model of this study illustrates how Green Adoption Practices (GAP) and Technological Integration (TI) serve as key factors that can influence and predict Service Quality (SQ) in the hotel industry. The model is based on the idea that hotels that actively practice sustainability and utilize modern technologies are more capable of delivering high-quality services that meet the changing expectations of guests. In today's competitive hospitality environment, adopting eco-friendly initiatives and innovative technologies has become essential for hotels aiming to improve their operations, strengthen their reputation, and enhance guest experiences.

Green Adoption Practices represent the first predictor variable of the study and include three important dimensions: environmental, social, and economic factors. These dimensions highlight the hotel's commitment to achieving sustainable operations by balancing environmental responsibility, social well-being, and financial stability. By incorporating green practices into daily operations, hotels can create a positive impact not only on the environment but also on their employees, guests, and the community.

The environmental aspect focuses on practices that help minimize the negative effects of hotel operations on the environment. These include initiatives such as conserving energy and water, reducing waste, promoting recycling, and controlling pollution. Implementing such practices allows hotels to use resources more efficiently while demonstrating responsibility toward environmental conservation. Guests are becoming increasingly aware of environmental issues, and many prefer hotels that embrace sustainable practices. As a result, strong environmental initiatives can improve guests' perceptions of the hotel and contribute to a more positive service experience.

The social aspect emphasizes the hotel's responsibility toward its employees, guests, and surrounding communities. This involves providing fair treatment to employees, ensuring their well-being, participating in community programs, and promoting ethical business practices. When employees feel valued and supported, they are more motivated to provide excellent service and build meaningful relationships with guests. Similarly, socially responsible actions help establish trust and strengthen the hotel's image, which may positively influence the quality of interactions between employees and guests.

The economic aspect focuses on maintaining the financial health of the hotel while implementing sustainable initiatives. Through efficient use of resources and improved operational strategies, hotels can reduce unnecessary expenses and increase long-term profitability. Financial sustainability enables hotels to invest in better facilities, employee development, and improved services. Therefore, economic factors play an important role in ensuring that green practices remain beneficial and sustainable over time.

The second predictor variable in the model is Technological Integration, which refers to the use of modern technologies to improve hotel operations and service delivery. With rapid advancements in technology and increasing guest demand for convenience and efficiency, hotels are adopting digital solutions to provide faster, more personalized, and more reliable services. This study examines Technological Integration through four dimensions: detection, engagement, agility, and continuity.

Detection refers to the ability of hotels to use technology to gather information, monitor operations, and identify areas that require improvement. Through tools such as data analytics, smart systems, and customer feedback platforms, hotels can better understand guest preferences and quickly address potential concerns. This enables management to make informed decisions and improve the overall quality of services offered.

Engagement focuses on how technology enhances communication and interaction between hotels and guests. Technologies such as online booking systems, mobile applications, digital communication platforms, and customer relationship management systems allow hotels to respond more efficiently to guest inquiries and provide personalized services. Improved engagement through technology creates a more convenient and satisfying experience for guests.

Agility refers to the hotel's ability to adapt quickly to new trends, changing customer needs, and unexpected challenges through the use of flexible technologies. A technologically agile hotel can introduce new solutions, modify existing processes, and maintain high service standards despite changes in the business

environment. This adaptability helps hotels remain competitive and responsive to guest expectations.

Continuity highlights the importance of technology in maintaining smooth and uninterrupted hotel operations. Reliable technological systems support consistent service delivery, efficient communication, and effective management of hotel activities. By ensuring continuous operations, hotels can provide dependable services and maintain guest satisfaction even during challenging situations.

The dependent variable of this model is Service Quality, which reflects how effectively a hotel meets or exceeds the expectations of its guests. Service Quality is measured through five dimensions: reliability, responsiveness, assurance, empathy, and tangibility. These dimensions represent different aspects of the service experience that contribute to guest satisfaction and loyalty. Reliability refers to the hotel's ability to consistently deliver promised services accurately and dependably. Green initiatives and technological systems help improve operational efficiency and reduce errors, allowing hotels to provide more consistent services. Responsiveness pertains to the willingness of employees and the effectiveness of technological tools in providing timely assistance and addressing guests' concerns.

Assurance involves the knowledge, professionalism, and confidence demonstrated by hotel employees in serving guests. By investing in employee welfare, training, and technology, hotels can strengthen staff capabilities and increase guest trust. Empathy reflects the ability of the hotel to provide personalized attention and understand the unique needs of each guest. Through responsible practices and the use of guest information systems, hotels can create more meaningful and customized experiences. Tangibility refers to the physical appearance of the hotel, including its facilities, equipment, personnel, and communication materials. The use of environmentally friendly facilities and advanced technological equipment can improve the overall physical environment of the hotel, making it more comfortable and attractive to guests.

Overall, the conceptual model suggests that the effective implementation of Green Adoption Practices and Technological Integration contributes significantly to the improvement of Service Quality in hotels. Sustainability initiatives provide a foundation for responsible and efficient operations, while technology enhances speed, accuracy, personalization, and consistency in service delivery. When these two approaches are successfully integrated, hotels are more likely to achieve higher guest satisfaction, build customer loyalty, strengthen their competitive advantage, and achieve long-term success in the hospitality industry.

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