

# Operationalizing Sustainability: A Case Study of Roseate House's Approach to Sustainable Cuisine

Ms. Ayusha Singh<sup>1</sup>, Dr. Neha Sharma<sup>2</sup>

<sup>1</sup>M.Sc. (HA) 4th sem. Student, NCHMCT, Noida, U.P-201309, India.

<sup>2</sup>M.Sc. (HA) Lecturer, NCHMCT, Noida, U.P-201309, India

## Abstract

Sustainability in hospitality, particularly in food and beverage operations, has become a critical focus as consumer awareness of ethical and environmental issues grows. This study examines how Roseate House integrates sustainability into its culinary practices through locally sourced ingredients, organic farming, hydroponics, and in-house oil processing. Using a mixed-methods approach, qualitative insights from key stakeholders and quantitative survey data analyzed via SPSS reveal a strong guest preference for ethical sourcing, ingredient transparency, and eco-conscious dining. Employees also perceive sustainability as beneficial for food quality, efficiency, and brand reputation, though challenges such as supply chain inconsistencies and cost constraints persist. The study highlights the role of guest engagement strategies—interactive experiences, education, and transparency—in enhancing customer loyalty. Strategic recommendations include strengthening supplier networks, expanding guest education programs, leveraging AI-driven procurement, and scaling hydroponic farming. These insights provide valuable implications for balancing sustainability with profitability and innovation in luxury hotel gastronomy.

**Keywords:** Sustainable cuisine, hospitality industry, local sourcing, organic farming, hydroponics, guest engagement, operational efficiency, supply chain management

## 1. Introduction

The Indian hotel industry is projected to contribute \$1 trillion to the country's GDP by 2047 (Hotelier India, 2025). However, this growth comes with increased waste generation and carbon emissions, as hotels are significant contributors to greenhouse gases (Ricourte, 2011). Environmental concerns in hospitality primarily stem from waste mismanagement, unsustainable ingredient sourcing, deforestation, overfishing, and excessive water consumption. With food production accounting for nearly 25% of global greenhouse gas emissions (Ritchie, 2020), adopting sustainable culinary practices in hotel operations can significantly reduce the industry's environmental footprint.

Sustainable cuisine emphasizes ethical sourcing, responsible farming, and mindful ingredient selection (United Nations, 2020). Beyond environmental benefits, sustainability is now a strategic business imperative. Hotels that integrate sustainable practices enhance brand reputation, attract eco-conscious guests, and achieve long-term cost savings through resource efficiency (Chemmanur, 2024).

Despite its advantages, implementing sustainable cuisine presents challenges such as high costs, supply chain inconsistencies, and quality control. While sustainability has become a priority in hospitality,

research on its practical implementation in Indian luxury hotels remains limited. This study examines how Roseate House, a luxury hotel in New Delhi, operationalizes sustainable cuisine—focusing on menu design, guest engagement, and the challenges encountered in integrating sustainability into daily operations.

## 2. Literature Review

Sustainable cuisine integrates eco-friendly sourcing, ethical practices, and waste reduction in culinary operations (Goggins, 2021). Sustainability has become a fundamental aspect of various industries, including hospitality, where hotels and restaurants are adopting innovative strategies to reduce their environmental impact (Jones et al., 2020). Luxury hotels, in particular, leverage sustainable dining to enhance brand image and align with global sustainability goals (Smith & Brown, 2019).

Implementing sustainable cuisine requires attention to the entire supply chain, from responsible sourcing to waste management (Pirani & Arafat, 2016). Agriculture and food production account for 34% of global greenhouse gas emissions (Crippa et al., 2021), with meat and dairy contributing significantly to resource depletion and pollution (Vanhonacker et al., 2013; McCabe, 2017). Food waste alone ranks as the third-largest emitter of carbon dioxide globally.

Growing consumer awareness has driven hotels to rethink food production and procurement strategies, as sustainability positively influences guest perception and purchasing decisions (Vermeir & Verbeke, 2019). Additionally, sustainable practices support the UN's Sustainable Development Goal 12—responsible consumption and production (UN, 2020). However, challenges such as cost, supply chain limitations, and guest preferences continue to hinder full-scale adoption in hospitality (Hallström et al., 2021).

### Theoretical Frameworks in Sustainable Cuisine

Sustainable cuisine in hospitality is guided by several theoretical models that address environmental, economic, and social considerations.

The **Sustainable Food Systems (SFS) Theory** emphasizes interconnected food production, distribution, and consumption with minimal ecological impact (Lang & Barling, 2019). It advocates for local sourcing, ethical labour, and eco-friendly practices such as hydroponic farming and farm-to-table dining (Reganold & Wachter, 2016). However, challenges like high costs, supply chain disruptions, and seasonal variability require hotels to balance local and global sourcing (Gössling et al., 2020).

The **Triple Bottom Line (TBL) Framework** assesses sustainability through three pillars: **People** (ethical labour and community engagement), **Planet** (carbon footprint reduction, waste management), and **Profit** (financial viability of sustainable practices) (Elkington, 2018). Hotels apply TBL through waste reduction, carbon offset programs, and ethical sourcing but must innovate pricing or seek subsidies to maintain affordability (Smith & Green, 2020).

The **Circular Economy Model** promotes waste minimization and resource efficiency, advocating for composting, upcycled ingredients, and biodegradable packaging (Ellen MacArthur Foundation, 2020). Hotels like Ritz-Carlton utilize zero-waste kitchens, repurposing food scraps into stocks and sauces (Liu & Wang, 2021).

The **Farm-to-Table and Locavore Movements** prioritize local, organic sourcing to enhance ingredient traceability, freshness, and sustainability (Martinez et al., 2019; Petrini, 2019).

**Stakeholder Theory** (Freeman et al., 2021) suggests balancing the needs of guests, suppliers, and regulators, while **Institutional Theory** (Scott, 2019) explains how hotels adopt sustainable practices to meet industry norms and regulations. These frameworks help contextualize the incentives and challenges

of sustainable cuisine in luxury hospitality.

### **Sustainable Ingredient Sourcing**

Ingredient sourcing is central to sustainable cuisine, with organic farming, hydroponics, and locally pressed oils reducing carbon footprints and supporting biodiversity (Reganold & Wachter, 2016). Sourcing from local farmers strengthens regional economies and minimizes emissions (Baldwin & Wilberforce, 2021), though challenges include seasonal variability, higher costs, and supply limitations (Gössling et al., 2020).

Hyper-local sourcing, such as on-site herb and vegetable gardens, significantly reduces supply chain emissions (Chen et al., 2021). Luxury brands like Six Senses and Rosewood Hotels integrate organic gardens and local partnerships to ensure fresh, low-impact ingredients (Smith & Green, 2020; Jones, 2022). However, small-scale suppliers may struggle to meet luxury hotel demands, necessitating hybrid sourcing strategies (Revilla et al., 2021).

Sustainable sourcing also enhances biodiversity by promoting indigenous crops, as seen in Scandinavian hotels incorporating foraging and wild harvesting (Hallström et al., 2021; Wahlen et al., 2020).

### **Sustainable Menu Development**

Sustainable menus emphasize seasonal adaptation, waste reduction, and ethical protein sourcing (Clarke, 2019). Seasonal menus reduce food miles and preservatives while supporting local farmers (Gössling et al., 2020), though logistical challenges like weather fluctuations require contingency planning (Lin et al., 2022).

Michelin-starred restaurants modify menus quarterly to align with harvest cycles, improving food freshness and local partnerships (Wahlen et al., 2020). Similar trends in Southeast Asia revive traditional cooking with heirloom produce and local seafood (Hallström et al., 2021).

Hotels employ AI-driven waste management, portion control, and root-to-stem cooking to minimize waste and costs (Parfitt et al., 2021). Elite restaurants like Noma and Eleven Madison Park have successfully balanced sustainability with profitability (Hallström et al., 2021).

Ethical protein sourcing is gaining traction, with hotels prioritizing sustainably certified seafood and plant-based alternatives to reduce environmental impact (Higgins, 2020; Jones & Hillier, 2020). MSC and ASC certifications ensure responsible seafood sourcing, while plant-based proteins like cultured meats and legumes are expanding menu options (Goggins, 2021).

### **Consumer Engagement in Sustainability**

Guest education plays a pivotal role in sustainable dining acceptance (Lin et al., 2022). Hotels leverage storytelling, QR codes, and chef interactions to highlight ingredient origins and sustainability efforts, increasing guest buy-in (Kim et al., 2020). The Ritz-Carlton's Eco-Table Initiative, for instance, enables guests to trace food sources through QR codes (Liu & Wang, 2021).

The **Slow Food Movement** aligns with sustainability by promoting high-quality, locally sourced ingredients over mass production (Petrini, 2019). Interactive dining experiences, such as chef-led presentations, further enhance engagement and reinforce the importance of ethical sourcing (Choi & Parsa, 2021).

## **Guest Engagement and Operational Challenges in Sustainable Cuisine**

### **Guest Engagement and Sustainability Communication**

Consumer awareness is crucial for the success of sustainable cuisine initiatives. Effective communication bridges the gap between sustainability efforts and guest understanding, ensuring long-term impact. Hotels

increasingly use digital storytelling, QR codes, and transparent sourcing information to educate diners (Kim et al., 2020). Sustainability-conscious consumers not only appreciate these initiatives but are also willing to pay premium prices for ethical dining experiences, strengthening market demand (Vermeir & Verbeke, 2019).

Interactive menus showcasing ingredient origins enhance guest engagement and foster brand loyalty (Choi & Parsa, 2021). The Ritz-Carlton's **Eco-Table Initiative**, for instance, allows guests to trace ingredients back to their source, reinforcing trust in sustainable practices (Liu & Wang, 2021). Sustainability certifications, such as **Green Key** and **LEED**, further communicate a hotel's commitment to responsible sourcing and operations (Jones & Hillier, 2020).

### Operational Challenges in Implementing Sustainable Cuisine

Despite its advantages, sustainable cuisine faces several challenges:

- **Supply Chain Disruptions:** Perishable organic produce lacks preservatives, making it vulnerable to spoilage. Weather conditions, supplier limitations, and transportation delays further impact ingredient availability (Rimington et al., 2020). Hybrid sourcing and in-house hydroponic farming can help mitigate these issues.
- **High Cost of Ingredients:** Sustainable sourcing often involves higher costs due to labour-intensive production (Mithun et al., 2022). This financial barrier requires balancing sustainability with profitability.
- **Staff Training:** Culinary teams need training to adopt new cooking methods, handle sustainable ingredients, and implement waste reduction strategies effectively (Revilla et al., 2021).

### Technology as a Solution

Smart inventory management and AI-driven demand forecasting help hotels optimize ingredient sourcing, reduce waste, and maintain cost efficiency (Baldwin & Wilberforce, 2021). These systems track ingredient origins, expiry dates, and carbon footprints, enabling more informed decision-making. Integrating technology ensures sustainability efforts remain practical and economically viable in a competitive market.

### Benefits of Sustainable Cuisine for Hotels

Sustainable cuisine enhances a hotel's brand image, distinguishing it from competitors in the luxury hospitality sector (Font et al., 2020). Younger generations actively seek hotels that align with their environmental values, making sustainability a key differentiator. This also provides marketing opportunities, allowing hotels to showcase initiatives like farm-to-table dining, locally sourced menus, and eco-friendly dining practices.

From an operational perspective, sustainable kitchen practices such as waste repurposing, composting, and portion control lead to significant cost savings (Gussoni et al., 2019). Composting further benefits in-house herb gardens or local farms, closing the sustainability loop.

For guest experience, sustainability-driven culinary offerings—such as interactive ingredient storytelling, seasonal tasting menus, and transparent sourcing—enhance customer satisfaction and foster long-term loyalty (Huang & Liu, 2021). Transparency in sourcing builds trust and reinforces the brand's reputation as an ethical and responsible business.

## 3. Research Gap

While extensive research exists on sustainable cuisine in global hospitality, there is limited literature on its practical implementation in Indian luxury hotels. Most studies focus on theoretical benefits rather than

the operational challenges faced by hotels. This research fills that gap by analysing Roseate House's sustainable cuisine strategies, offering empirical insights into ingredient sourcing, menu development, and guest engagement within the Indian luxury hospitality context.

Future studies should explore:

- Long-term financial viability of sustainable cuisine
- Evolving consumer expectations regarding sustainability
- Policy incentives supporting sustainable practices in the hospitality industry

## 4 Research Methodology

### Research Design and Approach

This study employs a descriptive-exploratory case study approach, integrating both qualitative and quantitative methods to examine how Roseate House operationalizes sustainable cuisine. As this research focuses on a single entity, a case study method is the most appropriate choice. This allows for an in-depth exploration of real-world sustainability practices in hospitality, providing rich qualitative insights while also assessing quantitative patterns and impacts.

Given that operationalizing sustainability in the culinary sector involves ingredient sourcing, menu development, waste management, and guest engagement, a descriptive-exploratory approach is particularly useful. The case study method facilitates detailed documentation and analysis of these interconnected processes.

### Justification for Case Study Approach

A case study is a strong research method for examining complex, real-life phenomena. Sustainability in hotel culinary operations is multifactorial, involving multiple stakeholders, diverse sustainability initiatives, and direct guest interactions. Unlike experimental or purely survey-based studies, a case study approach enables direct observation, documentation, and analysis of practices, challenges, and outcomes in their real-world context.

Additionally, case studies view sustainability as an evolving practice rather than a static concept. By combining qualitative methods (interviews and observations) with quantitative survey data, this research identifies patterns over time, cause-and-effect relationships, and practical ramifications for sustainability in hospitality.

### Rationale for Choosing Roseate House

Roseate House was selected due to its commitment to sustainable cuisine and its innovative initiatives in the luxury hospitality segment in India. Unlike many hotels that treat sustainability as an add-on, Roseate House has integrated sustainability into its core culinary operations.

### Key reasons for its selection:

- **Holistic Sustainability Model** – The hotel implements sustainability at multiple levels, from ingredient sourcing to waste management, guest engagement, and operations, creating a comprehensive framework for analysis.
- **Local Sourcing Focus – 70% of the hotel's food ingredients** are locally sourced, reducing carbon footprint and supporting regional farming.
- **Sustainability Initiatives** – The hotel operates its own hydroponic farm, an on-site oil press, uses edible cutlery, and follows a zero-waste philosophy.
- **Guest Engagement Strategies** – Initiatives like QR-coded menus, interactive food stations, and sustainability-themed dining experiences serve as practical models for sustainability communication



in hospitality.

- **Rich Data Availability** – Roseate House has provided interviews, behind-the-scenes documentation, and staff surveys, ensuring a robust dataset for analysis.

## 5. Data Collection Methods

This study employs both qualitative and quantitative data collection methods to provide a comprehensive analysis of sustainable cuisine at Roseate House.

### Qualitative Data Collection

Qualitative data was collected through semi-structured interviews, direct observations, and media documentation, ensuring a triangulated approach to enhance validity and depth.

#### Semi-Structured Interviews:

Key personnel interviewed included:

- Head of Cuisine (procurement, seasonal menus, waste management, hydroponic farming).
- CEO (brand strategy and sustainability impact).
- Sales & Marketing Head (guest engagement and feedback).
- Procurement Head (supplier relations and sustainable sourcing).

Each interview lasted 30-45 minutes, conducted face-to-face, transcribed, and analyzed thematically to identify best practices, challenges, and areas for improvement.

#### Direct Observations:

Real-time observations captured:

- Hydroponic farming and ingredient quality.
- Waste reduction techniques (e.g., repurposing scraps for jams/preserves).
- Guest engagement initiatives (QR-coded menus, food stations, edible cutlery).
- Sustainability-focused serving ware (e.g., reusable alternatives).

Supporting data included field notes, photographs, and videos to validate sustainability claims.

#### Media Documentation:

Collected materials included:

- Images of organic farms, herb gardens, and sustainability brochures.
- Behind-the-scenes food preparation routines and sustainable buffet setups.
- QR-coded tent cards for guest education.
- Lab test reports for ingredient quality assurance.
- Live sustainability activities such as oil pressing and hydroponic salad-making with guest participation.

### Quantitative Data Collection

A structured questionnaire was used to examine the impact of sustainability training on employee awareness and motivation.

Survey Tool:

- Employee awareness of sustainable cuisine (5-point Likert scale).
- Motivation to work in a sustainable environment (4-point scale).
- Participation in training programs (Yes/No).

The survey contained categorical and ordinal variables to allow for cross-tabulation and hypothesis testing.

#### Sampling Strategy:

- Purposive sampling targeted employees involved in food service and kitchen operations.

- 54 employees participated, providing a sufficient sample for Chi-Square tests.

#### **Data Collection Process:**

- Surveys were distributed via Google Forms for ease and anonymity.
- Responses were analyzed using SPSS (Statistical Package for the Social Sciences).

### **6. Data Analysis Strategy**

#### **Descriptive Statistics:**

- Frequency distributions for awareness and motivation levels.
- Percentage comparisons between trained vs. untrained employees.
- Pie charts and cross-tabulation tables to visualize key findings.

#### **Inferential Statistics:**

A Chi-Square test was conducted to assess if training had a statistically significant impact on:

1. Employee awareness of sustainable cuisine.
  2. Employee motivation to work in a sustainable environment.
- Pearson Chi-Square test was applied ( $p < 0.05$  threshold).
  - If  $p < 0.05$ , the null hypothesis was rejected, indicating a significant relationship between training and awareness/motivation.
  - If  $p > 0.05$ , the null hypothesis was retained, suggesting no significant relationship.

#### **Challenges and Limitations**

Despite a rigorous methodology, this study encountered several challenges and limitations:

- **Limited Generalizability:** Being a single-case study (Roseate House), findings are context-specific and may not be directly applicable to other hotels, as sustainability practices vary by brand and geography.
- **Potential Response Bias:** Employees might have overstated their sustainability knowledge due to social desirability bias, despite survey anonymity.
- **Time Constraints:** The study captures sustainability initiatives at a fixed point in time, but these practices evolve due to market shifts and management changes.
- **Sampling Constraints:** With 54 respondents, the sample is sufficient for exploratory analysis but may not fully capture diverse perspectives across all hotel departments.
- **Operational Variability:** Sustainability efforts fluctuate by season, guest demographics, and ingredient availability (e.g., organic produce), making this study a snapshot rather than a year-round assessment.

Despite these limitations, the study offers valuable practical insights and lays the groundwork for further research.

#### **Ethical Considerations**

This research adhered to ethical standards to protect participant confidentiality and ensure data integrity.

Key ethical measures included:

- **Informed Consent:** All interviewees and survey participants were fully briefed on the study's objectives and participated voluntarily. No data was collected without explicit consent.
- **Confidentiality:** Pseudonyms were used to anonymize participants, and no identifiable information was included in the final report. Staff responses were recorded without mentioning names or designations.

- **Information Security:** Interview transcripts, survey data, and audiovisual recordings were securely stored and used solely for research purposes. Operationally sensitive details were excluded from analysis.
  - **Non-Intrusive Observations:** Observations were conducted without disrupting hotel operations. Researchers did not interfere with staff workflows and adhered to hotel protocols.
- These ethical measures ensured participant rights and privacy while maintaining the credibility and accuracy of the study's findings.

## 7. INTERPRETATION & FINDINGS

### INTRODUCTION

This section presents findings from qualitative and quantitative analyses. The qualitative component examines sourcing strategies, sustainable menu development, guest engagement, and operational challenges, while the quantitative analysis evaluates employee training's impact on awareness and motivation regarding sustainable cuisine. Supporting evidence is available in the appendices.

### QUALITATIVE ANALYSIS

#### SOURCING STRATEGIES

Roseate House prioritizes local and sustainable sourcing, with 70% of ingredients procured from small farmers and regional suppliers (Culinary Head, personal communication, 2025; Appendix A). Strategies include:

- **Strategic Partnerships:** Collaborations with Darima Farms for cheese, Kerala farmers for chocolates, Coorg for coffee, and Goodwyn Tea for tea (Appendix B, Fig. 1a, 1b).
- **Hydroponics & Organic Farming:** Year-round fresh produce from hydroponics and organic farms fertilized with hotel livestock manure (Appendix B, Fig. 2 & 3).
- **Employee Engagement:** Staff visits to partner farms reinforce sustainability principles (CEO, personal communication, 2025; Appendix A, B Fig. 1c, 1d).

Challenges include seasonal ingredient availability and vendor reliability, impacting menu consistency (Smith et al., 2023; Brown & Green, 2022).

#### SUSTAINABLE MENU DEVELOPMENT

Menus are updated quarterly to incorporate seasonal ingredients, adhering to sustainability certifications like MSC for seafood. A special Ayurvedic menu promotes plant-based eating, reducing carbon footprint (F&B Head, personal communication, 2025; Appendix A, B Fig. 4). Seasonal, organic ice creams are made without preservatives or artificial Flavors (Appendix B Fig. 5a, 5b). Literature supports that seasonal sourcing enhances freshness, biodiversity, and local ecosystems (Johnson & Patel, 2023; Williams & Carter, 2022).

#### GUEST ENGAGEMENT & AWARENESS

- **QR Code-Enabled Storytelling:** Digital menus link to sustainability videos (F&B Head, personal communication, 2025; Appendix B Fig. 6).
- **Interactive Experiences:** Guests extract fresh oil using an oil press machine (Appendix B Fig. 7).
- **Edible Cutlery & Waste Reduction:** Promoted to align with eco-conscious consumer trends (EHL Hospitality Business School, 2024; Appendix B Fig. 8a, 8b).



Interactive experiences enhance guest engagement and brand loyalty (Lee & Kim, 2023).

## CHALLENGES & BENEFITS OF SUSTAINABLE CUISINE IMPLEMENTATION

### Challenges:

- **Higher Costs:** Sustainable sourcing requires strategic budgeting (CEO, personal communication, 2025; Appendix A).
- **Staff Training:** Regular training is necessary for effective communication of sustainability efforts.
- **Seasonal Ingredient Availability:** Fluctuations necessitate flexible procurement strategies (Johnson & Patel, 2023).
- **Vendor Reliability:** Small-scale suppliers may struggle with consistency (Brown & Green, 2022).

### Benefits:

- **Brand Image & Customer Loyalty:** Increased guest satisfaction and retention (CEO, personal communication, 2025; Appendix A).
- **Revenue Growth:** Hotels with strong sustainability initiatives see up to 15% higher guest retention (Expert Journals of Business, 2024).
- **Operational Efficiency:** Sustainable practices reduce long-term costs by optimizing resource use and minimizing waste (Thompson & Green, 2023).

## QUANTITATIVE ANALYSIS: EMPLOYEE TRAINING AND SUSTAINABILITY AWARENESS RESEARCH OBJECTIVE

This study aims to assess employee engagement and perceptions of sustainable cuisine at Roseate House, based on staff insights and survey data. A key aspect of this assessment is understanding the role of training programs in shaping employee awareness of sustainable cuisine and motivation to work in a sustainable environment.

### HYPOTHESIS

To examine the relationship between training, awareness, and motivation, the following hypotheses were tested:

- **H<sub>0</sub> (Null Hypothesis):** Employee training on sustainability initiatives has no significant impact on awareness of sustainable cuisine or motivation to work in a sustainable environment.
- **H<sub>1</sub> (Alternative Hypothesis):** Employees who receive training on sustainability initiatives are significantly more aware of sustainable cuisine and are more motivated to work in a sustainable environment.

### AWARENESS OF SUSTAINABLE CUISINE

A chi-square test was conducted to determine whether employee training influences awareness of sustainable cuisine.

- **Findings:** The crosstabulation results (see table 1) indicate that employees who received training reported significantly higher awareness levels, with most scoring 4 or 5 on the awareness scale. In contrast, those who did not receive training exhibited lower awareness levels.

**Training \* Awareness Crosstabulation**

Count		Awareness					Total
		1.00	2.00	3.00	4.00	5.00	
Training	No	0	3	4	1	0	8
	Yes	1	0	7	23	15	46
Total		1	3	11	24	15	54

**Table 1: Crosstabulation of Training and Awareness of Sustainable Cuisine**

**Statistical Significance:** A Pearson Chi-Square test (Insert Chi-Square Output Here) confirmed a statistically significant relationship between training and awareness ( $\chi^2(4) = 26.236, p < 0.001$ ). This result rejects the null hypothesis, suggesting that training enhances awareness of sustainable cuisine among employees.

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	26.236 <sup>a</sup>	4	<.001
Likelihood Ratio	22.570	4	<.001
N of Valid Cases	54		

**Table 2: Chi-Square Test for Training and Awareness of Sustainable Cuisine**

**EMPLOYEE MOTIVATION IN A SUSTAINABLE WORK ENVIRONMENT**

To further assess the impact of training, a chi-square test was conducted to analyse its effect on employee motivation to engage with sustainability initiatives.

**Findings:** The crosstabulation results (See table 3) revealed that employees who received training were significantly more likely to report high motivation, with 33 out of 46 trained employees indicating they were "highly motivated." Conversely, untrained employees showed minimal motivation, with most falling into the "No Difference" or "Less Motivated" categories.

**Training \* Motivation Crosstabulation**

Count		Motivation				Total
		Less motivated	No difference	Somewhat motivated	Yes, highly motivated	
Training	No	2	6	0	0	8
	Yes	0	0	13	33	46
Total		2	6	13	33	54

**Table 3: Crosstabulation of Training and Employee Motivation**

**Statistical Significance:** A Pearson Chi-Square test (See table 4) confirmed a statistically significant relationship between training and motivation ( $\chi^2(3) = 54.000, p < 0.001$ ). This result rejects the null hypothesis, indicating that training positively impacts employee motivation to engage with sustainability initiatives.

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	54.000 <sup>a</sup>	3	<.001
Likelihood Ratio	45.304	3	<.001
N of Valid Cases	54		

**Table 4: Chi-Square Test for Training and Employee Motivation**

## INTERPRETATION AND FINDINGS FROM GOOGLE FORM

These findings provide empirical support for the role of training in **enhancing employee engagement and shaping perceptions of sustainable cuisine** at Roseate House. Employees who receive structured training **demonstrate higher awareness levels and greater motivation** to support sustainability initiatives.

This aligns with existing research emphasizing the role of **education and professional development** in embedding sustainability values within the hospitality sector (Sustainable Hospitality Alliance, 2023). By investing in structured sustainability training, Roseate House can further strengthen employee commitment to **sustainable cuisine practices**, fostering an **organizational culture that actively promotes sustainability from within**.

### Interpretation and Findings

The survey results indicate that Roseate House has successfully integrated sustainability training among its employees, with 85.2% having received formal education on sustainability initiatives. However, the small percentage (14.8%) lacking training suggests room for improved accessibility and inclusivity in these programs.

Employees generally understand the hotel's sustainable cuisine initiatives, with a majority rating their understanding as high. However, 27.9% rated their knowledge as moderate or low, highlighting the need for further training and communication to ensure comprehensive awareness.

Employee sentiment toward sustainable cuisine is overwhelmingly positive, with 87.1% expressing strong support. This indicates a favourable work culture toward sustainability, though a small percentage may still require engagement to fully align with the initiative.

Challenges in implementing sustainability initiatives include high costs (57.4%) and inconsistent supply of organic/local produce (57.4%), reinforcing financial and logistical barriers. Supply chain issues and increased workload were also cited as concerns, while guest interest was not seen as a challenge, suggesting strong external support for sustainable practices.

Sustainability initiatives have had a neutral to slightly positive impact on kitchen and restaurant operations, with 64.8% rating their impact as moderate. While some employees recognize benefits, clearer communication on operational advantages could enhance perceptions of these practices.

Sustainability positively influences employee motivation, with 61.1% feeling highly motivated by working in an eco-friendly restaurant. However, 14.8% reported little to no impact on motivation, suggesting that additional incentives or support may be necessary to sustain engagement.

Support for expanding sustainability efforts is strong, with 88.9% advocating for a greater focus. This widespread approval underscores the potential for further investment in sustainability programs, aligning with both employee and guest interests.

Guest interest in sustainability varies, with 50% inquiring about sustainable dining practices occasionally and 25.9% doing so often. Organic ingredients (70.4%) and locally sourced food (53.7%) are the most valued aspects, while interest in hydroponics and waste reduction is comparatively lower. This suggests that communication efforts should emphasize ingredient sourcing to align with guest priorities.

Sustainability-conscious guests report higher satisfaction levels, with 75.9% rating their dining experience positively. This implies that transparent communication about sustainable initiatives can enhance guest satisfaction and loyalty.

Willingness to pay more for sustainable food is evident, with 61.1% of guests often willing to do so, reinforcing the potential for premium pricing strategies in sustainable dining. Additionally, guest feedback

is predominantly positive, with 61.1% appreciating the hotel's sustainability efforts, while only a minor fraction (5.6%) perceives sustainable dishes as too expensive.

Overall, the findings suggest that Roseate House has successfully cultivated a culture of sustainability among employees and guests, though logistical and cost-related challenges persist. Enhancing education, improving supply chain reliability, and communicating the benefits of sustainability more effectively could further strengthen these initiatives.

## 8 CONCLUSIONS

The analysis confirms that Roseate House has successfully integrated sustainability into its restaurant operations through **local sourcing, seasonal menu adaptation, guest engagement strategies, and staff training programs**. While challenges such as cost, seasonal ingredient availability, vendor reliability, and training logistics exist, the benefits—including increased guest satisfaction, revenue growth, and enhanced brand loyalty—underscore the value of sustainable cuisine initiatives. The statistical findings further validate that **employee training plays a crucial role in fostering awareness and motivation**, highlighting the need for continuous investment in sustainability education within the hospitality sector.

### Discussion and Conclusion

This study underscores the effectiveness of Roseate House's sustainable sourcing, menu development, guest engagement, and employee training in promoting sustainability. The hotel has successfully integrated local and organic sourcing, hydroponics, and strategic partnerships, though challenges such as seasonal availability and vendor reliability persist. Guest engagement initiatives, such as QR code storytelling and interactive sustainability experiences, have enhanced awareness and brand loyalty, aligning with literature on consumer interaction and retention. Employee training has also played a crucial role in improving awareness and motivation.

However, financial constraints, operational challenges, and inconsistent ingredient supply remain barriers. Higher costs necessitate strategic budgeting, and menu adaptability is key to managing seasonal fluctuations. Despite these challenges, the long-term benefits—higher guest satisfaction, revenue growth, and operational efficiency—justify continued investment in sustainability initiatives.

### Future Recommendations

1. Supplier Diversification – Partnering with multiple vendors to mitigate ingredient shortages.
2. Advanced Employee Training – Expanding learning modules and digital platforms to enhance staff engagement.
3. Enhanced Guest Communication – Strengthening sustainability messaging via social media and menu labelling.
4. Investment in Sustainable Infrastructure – Expanding in-house hydroponic and organic farming to improve cost efficiency.
5. Waste Reduction Initiatives – Implementing composting and surplus food donation programs to align with consumer expectations.

By addressing these areas, Roseate House can further solidify its leadership in sustainable hospitality while improving cost efficiency, supply chain reliability, and operational effectiveness.

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