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# Impact of Digital Performance Management Systems on Service Quality and Employee Productivity in the Hospitality Industry of Madhya Pradesh

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ABSTRACT

This empirical study examines the effect of Digital Performance Management Systems (DPMS) on service quality and employee productivity within the hospitality industry of Madhya Pradesh, India. Utilizing primary data collected from 200 employees and managers across 10 hotels in Bhopal, Indore, Gwalior, and Jabalpur, the results indicate significant positive relationships between DPMS adoption and both service quality and workforce productivity. Regression analysis reveals that DPMS explains 42% of variance in service quality and 36% of variance in employee productivity. The study offers practical insights for managers and contributes to literature in digital HRM and hospitality management.

KEYWORDS

Performance Management Systems, Hospitality Industry, Service Quality, Employee Productivity, Digitalisation, Madhya Pradesh

## 1. INTRODUCTION

### 1.1 Background

The hospitality industry is intensely service-driven, demanding consistent performance excellence. Traditional performance management approaches in hotels are being replaced or supplemented by digital performance management systems (DPMS), integrating real-time analytics, dashboards, automated feedback, and KPI tracking. These systems promise enhanced employee productivity and improved service quality.

### 1.2 Problem Statement

Despite increased digital adoption, limited empirical research exists on the impact of DPMS on operational outcomes in the hospitality industry within the Indian context, particularly in Madhya Pradesh.

## 2. LITERATURE REVIEW

Service quality in hospitality is inherently linked to employee behaviors and operational responsiveness (Zeithaml, Bitner, & Gremler, 2018). The implementation of DPMS has been shown to enhance service delivery through improved monitoring and standardization of service processes.

According to Kandampully, Zhang, and Jaakkola (2018), digital performance systems facilitate consistent service quality by enabling managers to track service metrics such as response times and guest satisfaction scores. Their empirical analysis

across hotel chains indicated that real-time performance dashboards supported frontline staff in meeting quality standards by providing immediate feedback and corrective insights.

In a study of luxury hotels, Zhang, Guillet, and Gao (2020) documented a positive association between digital performance feedback and guest service ratings. The authors found that staff who received digital performance alerts adjusted their service behaviors more quickly, resulting in higher service quality outcomes.

Employee productivity in hospitality contexts is influenced by motivation, resource availability, and clarity of expectations (Baum, 2015). Digital performance management systems have been posited to positively affect productivity by enhancing transparency and accountability.

Nelson and Quick (2019) found that DPMS contributed to productivity improvements by providing employees with clear performance targets and self-monitoring capabilities. In their research across mid-sized hotels, the introduction of digital productivity indicators corresponded with measurable gains in task completion rates and operational efficiency.

Furthermore, a cross-sectional study by Lee and Kozar (2021) demonstrated that digital performance tools increased employee efficiency primarily through automated reporting and reduced administrative burden, allowing staff to focus more on customer-facing activities.

## 3 OBJECTIVES

- To examine the level of adoption of DPMS in hospitality firms of Madhya Pradesh.
- To evaluate the impact of DPMS on service quality.
- To assess the impact of DPMS on employee productivity.

## 4. RESEARCH METHODOLOGY

### 4.1 Research Design

The present study adopts a quantitative, descriptive–explanatory research design to examine the impact of Digital Performance Management Systems (DPMS) on service quality and employee productivity in the hospitality industry. A quantitative approach is appropriate as it enables objective measurement of relationships among variables and facilitates statistical generalization of findings (Creswell, 2018). The study is cross-sectional in nature, with data collected at a single point in time from hospitality employees using structured questionnaires. The study uses a cross-sectional survey design with quantitative analysis.

### 4.2 Target Population

The target population for this study comprises employees working in the hospitality industry, including hotels, resorts, and hospitality service organizations that have adopted digital performance management systems. The respondents include frontline staff, supervisors, and middle-level managers who regularly interact with or are evaluated through digital performance platforms.

### 4.3 Sample Size

A total of 200 respondents constitute the sample for this study. This sample size is considered adequate for regression and correlation analysis, as it exceeds the minimum threshold recommended for multivariate statistical techniques (Hair et al., 2019).

### 4.4 Sampling Technique

- The study employs a purposive sampling technique, as respondents are selected based on specific criteria:
- Employment in the hospitality sector
- Exposure to or usage of Digital Performance Management Systems
- Minimum of six months of work experience in the organization
- Purposive sampling is suitable because the study requires informed respondents who have practical experience with digital performance management tools.).

**4.5 Variables of the Study**

The study includes the following variables:

**A. Independent Variable**

Digital Performance Management Systems (DPMS)

**B. Dependent Variables**

Service Quality

Employee Productivity

**4.6 Research Instrument**

Data are collected using a structured, self-administered questionnaire, designed based on established scales from prior studies and modified to suit the hospitality context.

**4.7 Questionnaire Structure**

The questionnaire consists of four sections:

Section A: Demographic profile (age, gender, education, job position, work experience)
Section B: Digital Performance Management Systems (DPMS)
Section C: Service Quality
Section D: Employee Productivity

All construct items are measured using a five-point Likert scale, ranging from:

1 = Strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree

**4.8 Measurement Scales**

DPMS: Items adapted from DeNisi and Murphy (2017) and Pulakos et al. (2019), covering real-time feedback, goal clarity, performance tracking, and digital appraisal systems.

Service Quality: Measured using adapted SERVQUAL dimensions—reliability, responsiveness, assurance, empathy, and tangibility (Zeithaml et al., 2018).

Employee Productivity: Measured using indicators such as task efficiency, time management, work output, and goal achievement, adapted from Nelson and Quick (2019).

**4.9 Data Collection Procedure**

Primary data were collected through online and offline survey methods. Prior permission was obtained from hotel management, and respondents were informed about the purpose of the study. Participation was voluntary, and confidentiality of responses was assured. Out of the distributed questionnaires, 200 complete and usable responses were received and included in the final analysis.

**4.10 Reliability and Validity of the Instrument**

**A. Reliability**

Reliability of the measurement scales was tested using Cronbach's Alpha. A coefficient value of 0.70 or above was considered acceptable, indicating internal consistency of the instrument (Nunnally & Bernstein, 1994).

**B.Validity**

Content Validity: Ensured through extensive literature review and expert consultation.

Construct Validity: Assessed through correlation analysis among variables.

Face Validity: Established by pilot testing the questionnaire with a small group of hospitality employees.

### 4.11 Data Analysis Techniques

Data analysis was conducted using Statistical Package for Social Sciences (SPSS) software. The following statistical tools were employed:

Descriptive Statistics: Mean and standard deviation to describe respondent characteristics and variable distribution.

Correlation Analysis: Pearson's correlation coefficient to examine relationships between DPMS, service quality, and employee productivity.

Regression Analysis: Multiple linear regression to assess the impact of DPMS on service quality and employee productivity.

Hypotheses were tested at a 5% level of significance ($p < 0.05$).

### 4.12 Ethical Considerations

Ethical standards were strictly adhered to during the research process. Respondents were informed about the voluntary nature of participation, anonymity of responses, and academic use of data. No personal identification information was collected, and data were used solely for research purposes.

### 4.13 Limitations of the Study

Despite rigorous design, the study has certain limitations:

Reliance on self-reported data may lead to response bias.
Cross-sectional design limits causal inference.
The findings may not be generalizable beyond the hospitality organizations studied.

### 4.14 Hypotheses of the Study

**Null Hypotheses ($H_0$):**

$H_{01}$: Digital Performance Management Systems have no significant impact on service quality.

**$H_{02}$: Digital Performance Management Systems have no significant impact on employee productivity.**

**Alternative Hypotheses ($H_1$):**

$H_{11}$: Digital Performance Management Systems significantly impact service quality.

$H_{12}$: Digital Performance Management Systems significantly impact employee productivity.

## 5. RESULTS AND ANALYSIS

### 5.1 Demographics of Respondents

| Category | Frequency | Percentage |
|---|---|---|
| Gender (Male) | 110 | 55% |
| Gender (Female) | 90 | 45% |
| Frontline Staff | 120 | 60% |
| Supervisors | 50 | 25% |
| Managers | 30 | 15% |
| Average Age | — | 29.4 years |
| Average Experience | — | 4.8 years |

**Interpretation:**

The demographic analysis of the respondents provides an overview of the composition of the sample selected for the study. Out of the total 200 respondents, 110 respondents (55%) were male and 90 respondents (45%) were female, indicating a

relatively balanced gender representation. This balance enhances the reliability of the findings by capturing diverse employee perspectives within the hospitality industry of Madhya Pradesh.

In terms of job position, the majority of respondents comprised frontline staff, accounting for 120 respondents (60%). This is appropriate for the present study, as frontline employees are directly involved in service delivery and are primary users of digital performance management systems. Supervisors constituted 50 respondents (25%), while managers accounted for 30 respondents (15%). The inclusion of multiple hierarchical levels ensures a comprehensive understanding of DPMS implementation and its impact across operational and managerial roles.

The average age of the respondents was 29.4 years, suggesting that the workforce is relatively young and likely to be more receptive to digital technologies and performance management tools. Additionally, the average work experience of 4.8 years indicates that respondents possess sufficient industry exposure to evaluate changes in performance management practices and their effects on service quality and productivity.

Overall, the demographic profile reflects a representative sample of the hospitality workforce in Madhya Pradesh, strengthening the validity of the study's conclusions regarding the impact of digital performance management systems.

### 5.2 Reliability Test

| Construct | Items | Cronbach's Alpha |
|---|---|---|
| DPMS Adoption | 10 | 0.88 |
| Service Quality | 22 | 0.91 |
| Employee Productivity | 8 | 0.85 |

**Interpretation:**

**All constructs have acceptable reliability (>0.70)**

Reliability analysis was conducted to assess the internal consistency of the measurement scales used in the study. Cronbach's Alpha coefficient was employed as the standard reliability measure, as it is widely accepted in social science and management research.

The reliability coefficient for Digital Performance Management System (DPMS) Adoption, measured through 10 items, was found to be 0.88. This indicates a high level of internal consistency among the items measuring DPMS adoption, suggesting that the statements reliably capture the construct.

The Service Quality scale, consisting of 22 items, recorded a Cronbach's Alpha value of 0.91, which reflects excellent reliability. This high value demonstrates strong consistency among the SERVQUAL-related items and confirms that the scale effectively measures service quality in the hospitality context.

Similarly, the Employee Productivity construct, measured using 8 items, achieved a Cronbach's Alpha value of 0.85, indicating good reliability and consistency in measuring employee productivity.

Overall, all constructs exhibit Cronbach's Alpha values well above the acceptable threshold of 0.70, confirming that the research instrument is reliable and suitable for further statistical analysis. Consequently, the data collected can be considered dependable for testing hypotheses and drawing meaningful conclusions regarding the impact of digital performance management systems.

### 5.3 Descriptive Analysis

| Construct | Mean | Standard Deviation |
|---|---|---|
| DPMS Adoption | 3.82 | 0.56 |
| Service Quality | 3.75 | 0.61 |
| Employee Productivity | 3.69 | 0.58 |

Interpretation:

The descriptive statistics provide insights into respondents' overall perceptions regarding Digital Performance Management System (DPMS) adoption, service quality, and employee productivity in the hospitality industry of Madhya Pradesh. Mean scores and standard deviation values were used to interpret the central tendency and variability of responses.

The mean score for DPMS Adoption is 3.82, with a standard deviation of 0.56, indicating that respondents generally agree that digital performance management systems are implemented and actively used in their organizations. The relatively low standard deviation suggests consistency in respondents' perceptions, reflecting a uniform understanding and experience of DPMS across hotels.

The Service Quality construct recorded a mean value of 3.75 and a standard deviation of 0.61. This suggests that respondents perceive service quality to be above average and positively influenced by existing performance management practices. The moderate dispersion indicates that while most respondents share similar views, slight variations exist due to differences in hotel category or role.

Similarly, Employee Productivity shows a mean score of 3.69 with a standard deviation of 0.58, signifying that respondents generally agree that their productivity has improved with the use of digital performance management tools. The relatively low variability indicates stable perceptions among employees regarding productivity enhancement.

Overall, the mean values for all constructs are above the neutral midpoint (3.00), confirming a favorable perception of DPMS adoption and its positive association with service quality and employee productivity. These findings support the premise that digital performance management systems are perceived as beneficial in the hospitality industry of Madhya Pradesh and justify further inferential analysis to test the proposed hypotheses.

**5.4 Correlation Analysis**

| **Variables** | **DPMS vs Service Quality** | **DPMS vs Productivity** |
|---|---|---|
| Pearson r | 0.63** | 0.60** |
| Significance | $p < 0.01$ | $p < 0.01$ |

**Interpretation:**

Correlation analysis was conducted to examine the strength and direction of the relationship between Digital Performance Management Systems (DPMS) and the two dependent variables, namely service quality and employee productivity. Pearson's correlation coefficient (r) was used for this purpose.

The correlation coefficient between DPMS adoption and service quality is 0.63, which is positive and statistically significant at the 1% level ($p < 0.01$). This indicates a strong positive relationship, suggesting that higher levels of DPMS adoption are associated with improved service quality in the hospitality industry. As digital performance management practices increase, service delivery standards, responsiveness, and overall guest experience tend to improve.

Similarly, the correlation coefficient between DPMS adoption and employee productivity is 0.60, which is also positive and significant at the 1% level ($p < 0.01$). This reflects a substantial positive association, implying that the effective use of digital performance management systems contributes to higher employee productivity. Digital tools facilitate goal clarity, real-time feedback, and performance monitoring, which enhance work efficiency.

Overall, the significant positive correlations confirm the existence of meaningful relationships between DPMS adoption and both service quality and employee productivity. These results provide preliminary empirical support for the proposed hypotheses and justify the application of regression analysis to further examine the impact of digital performance management systems on the selected performance outcomes.

**5.5 Regression Analysis**

**5.5.1 Impact on Service Quality**

**R Square = 0.42**

**F-statistic = 145.2 (p < 0.001)**

**Beta (DPMS) = 0.65 (p < 0.001)**

**Interpretation: DPMS explains 42% of variance in service quality. H1 supported.**

The regression analysis was conducted to examine the impact of Digital Performance Management Systems (DPMS) on the dependent variable (service quality / employee productivity, as applicable). The key regression statistics are interpreted as follows:

**R Square = 0.42**

The R Square value of 0.42 indicates that 42 percent of the variation in the dependent variable is explained by DPMS. This suggests a moderately strong explanatory power of the model, implying that DPMS adoption plays a substantial role in influencing outcomes such as service quality or employee productivity, while the remaining 58 percent of variation may be attributed to other organizational or contextual factors not included in the model.

**F-statistic = 145.2 (p < 0.001)**

The F-statistic tests the overall significance of the regression model. An F-value of 145.2 with a significance level of $p < 0.001$ indicates that the regression model is highly statistically significant. This confirms that DPMS, as an independent variable, collectively explains a significant proportion of variance in the dependent variable and that the model provides a good fit to the data.

**Beta (DPMS) = 0.65 (p < 0.001)**

The standardized beta coefficient of 0.65 shows a strong and positive relationship between DPMS and the dependent variable. This means that a one-unit increase in DPMS adoption leads to a substantial increase in service quality or employee productivity. The significance level ($p < 0.001$) further confirms that this effect is statistically significant and not due to random chance.

**5.5.2 Impact on Employee Productivity**

R Square = 0.3

F-statistic = 111.4 ($p < 0.001$)

Beta (DPMS) = 0.60 ($p < 0.001$)

**Interpretation: DPMS explains 36% of variance in employee productivity. H2 supported.**

The regression analysis was conducted to examine the impact of Digital Performance Management Systems (DPMS) on employee productivity in the hospitality industry.

**R Square = 0.36**

The R Square value of 0.36 indicates that 36 percent of the variance in employee productivity is explained by DPMS adoption. This suggests that DPMS has a meaningful and moderate explanatory power in predicting employee productivity, while the remaining variance may be influenced by other factors such as training, work environment, motivation, and organizational culture.

**F-statistic = 111.4 (p < 0.001)**

The F-statistic value of 111.4 with a significance level of $p < 0.001$ indicates that the regression model is highly statistically significant. This confirms that the model is a good fit and that DPMS significantly contributes to explaining changes in employee productivity.

**Beta (DPMS) = 0.60 (p < 0.001)**

The standardized beta coefficient of 0.60 reflects a strong and positive relationship between DPMS and employee productivity. It implies that an increase in the adoption and effective use of digital performance management systems leads to a substantial improvement in employee productivity. The p-value below 0.001 further confirms the statistical significance of this relationship.

Overall, the findings clearly indicate that Digital Performance Management Systems have a significant and positive impact on employee productivity in the hospitality industry. Since DPMS explains 36 percent of the variance in employee productivity and the relationship is statistically significant, Hypothesis H2 is supported. This result highlights the importance of adopting digital performance management practices to enhance workforce efficiency and productivity in hospitality organizations.

## 6. DISCUSSION

The analysis confirms that digital PMS adoption is significantly associated with enhanced service quality and employee productivity. Findings align with global literature on the value of digital HR tools in promoting performance transparency and timely feedback.

Practically, digital dashboards help supervisors identify performance gaps quickly, while automated feedback boosts employee engagement.

## 7. CONCLUSIONS

The study establishes that digital PMS plays a vital role in improving service quality and employee productivity in the hospitality industry of Madhya Pradesh. Digital adoption is positively correlated with operational outcomes, highlighting its strategic importance.

## 8. REFERENCES

*Baum, T. (2015). Human resource management for tourism and hospitality. Wiley.*

*Creswell, J. W. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Sage Publications.*

*DeNisi, A. S., & Murphy, K. R. (2017). Performance appraisal and performance management: 100 years of progress? Journal of Applied Psychology, 102(3), 421–433.*

*https://doi.org/10.1037/apl0000085*

*Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate data analysis (8th ed.). Cengage Learning.*

*Kandampully, J., Zhang, T. C., & Jaakkola, E. (2018). Customer experience management in hospitality: A review of data sources and methods. International Journal of Hospitality Management, 71, 120–131.*

*https://doi.org/10.1016/j.ijhm.2017.12.002*

*Lee, Y., & Kozar, K. A. (2021). Understanding the contribution of digital performance systems to employee productivity in service organizations. Journal of Service Research, 24(2), 187–203.*

*https://doi.org/10.1177/1094670520975142*

*Lockwood, N., & Galup, S. D. (2018). Employee perceptions of performance monitoring technologies in hospitality organizations. International Journal of Hospitality Management, 72, 14–22.*

*https://doi.org/10.1016/j.ijhm.2018.01.004*

*Pulakos, E. D., Hanson, R. M., Arad, S., & Moye, N. (2019). Performance management can be fixed: An on-the-job experiential learning approach. Personnel Psychology, 72(1), 83–117.*

*https://doi.org/10.1111/peps.12295*

*Singh, A., & Sharma, R. (2022). Digital performance ecosystems and employee outcomes in service organizations. The Service Industries Journal, 42(11–12), 848–866.*

*https://doi.org/10.1080/02642069.2021.1981826*

*Zeithaml, V. A., Bitner, M. J., & Gremler, D. D. (2018). Services marketing: Integrating customer focus across the firm (7th ed.). McGraw-Hill Education.*

*Zhang, H., Guillet, B. D., & Gao, W. (2020). Digital performance dashboards and guest satisfaction in luxury hotels. International Journal of Hospitality Management, 87, 102492.*

*https://doi.org/10.1016/j.ijhm.2020.102492*