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Housekeeping Communication and Guest Satisfaction: A Cross-Level Study of Vertical and Horizontal Communication at Hotel Atsari Parapat

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Abstract: Using a cross-sectional cross-level quantitative design, this study examined the association between employee-level vertical and horizontal housekeeping communication and guest-level satisfaction at Hotel Atsari Parapat, Indonesia. The study involved 24 housekeeping employees and 60 hotel guests. Vertical communication and horizontal communication were assessed among employees using six-item Likert scales, while guest satisfaction was assessed among guests using six items. Guest responses were organized into 24 employee-based analytical clusters containing two or three guest observations per cluster. Mean scores were favorable for vertical communication (M = 4.021, SD = 0.477), horizontal communication (M = 3.951, SD = 0.512), and guest satisfaction (M = 3.872, SD = 0.446). Cluster-adjusted multiple regression showed that vertical communication (B = 0.320, 95% CI [0.059, 0.581], p = 0.018) and horizontal communication (B = 0.346, 95% CI [0.121, 0.571], p = 0.004) were positively associated with guest satisfaction. The model explained 39.6% of the observed variation in satisfaction (adjusted R^2 = 0.375), with a significant joint Wald test (F(2, 23) = 17.388, p < 0.001). The findings should be interpreted in light of the single-hotel setting and the modest number of 24 employee clusters, which limit generalizability and the precision of cluster-adjusted estimates. The findings emphasize the importance of clear supervisory communication, peer coordination, and structured handovers in housekeeping operations.

Keywords: Guest Satisfaction; Horizontal Communication; Hotel Housekeeping; Service Coordination; Vertical Communication

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INTRODUCTION

Hotel service quality depends on interdependent operational activities that guests rarely observe directly. In housekeeping, employees interpret instructions, update room status, coordinate unfinished tasks, and respond to requests; guests experience the consequences through cleanliness, room readiness, comfort, and response time. Recent evidence confirms that staff performance and service attributes remain central to hotel evaluations (Kalnaovakul &

Promsivapallop, 2023; Perdomo-Verdecia et al., 2024; Shin et al., 2024; Wąsowicz-Zaborek, 2025). Housekeeping communication is therefore a service-management issue, not merely an internal administrative process.

Hospitality communication research has largely emphasized employee outcomes. Supervisor and coworker communication relates to satisfaction, organizational support, turnover intention, engagement, voice, knowledge sharing, and technology-enabled coordination (Čuić Tanković et al., 2022; Duarte & Silva, 2023; Guo & Ayoun, 2025; Huang et al., 2023; Liu-Lastres et al., 2024; Shi et al., 2024; Tkalac Verčič & Men, 2023; Zheng et al., 2025). These studies establish communication as an employee-side resource but provide limited direct evidence that departmental communication is reflected in guest evaluations.

Guest-satisfaction studies show that evaluations reflect multiple service attributes whose importance varies across settings and segments (Berezina et al., 2016; Padma & Ahn, 2020; Perdomo-Verdecia et al., 2024; Wąsowicz-Zaborek, 2025). Recent hotel evidence also shows that employee–guest interactions and key frontline service moments can shape satisfaction with the overall hotel experience (McCullough et al., 2024; Meng & Lai, 2025). Communication is especially relevant in housekeeping: well-designed communication about cleaning practices can preserve satisfaction when routines change (Zinn et al., 2024). Yet guest-centered studies rarely link service outcomes directly to the vertical and horizontal communication patterns of employees performing the work.

This separation between employee-side coordination and guest-side evaluation creates a research gap. Housekeeping is highly interdependent: room status, priorities, guest requests, and unfinished work must pass accurately between supervisors, room attendants, and shifts. Communication failures can therefore become visible as delays, inconsistencies, or unresolved requests. Hotel Atsari Parapat in North Sumatra provides a focused context for examining whether supervisory and peer communication are associated with housekeeping guest satisfaction.

The study distinguishes two pathways. Vertical communication covers supervisory instructions, feedback, priorities, and upward reporting; accessible upward channels help surface operational problems (Huang et al., 2023; Morrison, 2023). Horizontal communication covers information exchange, mutual assistance, problem solving, and shift handovers. Relational coordination theory argues that timely, accurate, problem-solving communication supports interdependent work (Gittell, 2002), while hospitality studies link coworker communication and communication technologies with knowledge sharing, coordination, and engagement (Guo & Ayoun, 2025; Shi et al., 2024; Zheng et al., 2025). Relational coordination theory is used here as an interpretive mechanism rather than as a construct that is tested in its entirety. The theory proposes that timely, accurate, problem-solving communication can support interdependent work, whereas the present study measures narrower operational communication practices: supervisory clarity, feedback, priorities and upward reporting for vertical communication, and information exchange, task coordination, mutual assistance, handovers and joint problem solving for horizontal communication. Accordingly, the empirical measures should not be treated as a complete operationalization of relational coordination theory.

Accordingly, this cross-level study separates vertical and horizontal housekeeping communication and evaluates their associations with guest satisfaction while accounting for repeated guest observations grouped under employee identifiers. H1 proposes a positive association between vertical communication and guest satisfaction; H2 proposes a positive

association between horizontal communication and guest satisfaction; and H3 proposes that both communication dimensions jointly account for variation in guest satisfaction.

METHOD

Research design, setting, study period, and participants

A cross-sectional cross-level quantitative design was used to examine the relationship between employee-level housekeeping communication and guest-level satisfaction at Hotel Atsari Parapat, Parapat, North Sumatra, Indonesia. The study was conducted on site at the hotel over an approximately three-month period, covering research preparation, respondent recruitment and questionnaire administration, data collection, data processing, statistical analysis, and report preparation. The study setting focused on the housekeeping department because its daily operations depend on the timely exchange of supervisory instructions, work priorities, room-status information, guest requests, shift handovers, mutual assistance, and problem-solving communication among employees. These operational communication processes were directly relevant to the vertical- and horizontal-communication constructs examined in the study, while the guest questionnaire captured housekeeping-related evaluations of room cleanliness, presentation, service timeliness, comfort, fulfillment of expectations, and overall satisfaction. Housekeeping employees were recruited from the hotel's housekeeping department, whereas eligible hotel guests were recruited on the premises of Hotel Atsari Parapat during the data-collection period after having relevant experience of the hotel stay and housekeeping service. The study involved 24 housekeeping employees and 60 hotel guests. Vertical and horizontal communication were measured at the employee level, whereas guest satisfaction was measured at the guest level. The analysis used complete respondent records for the variables required in each statistical procedure.

Participant eligibility, inclusion, and exclusion criteria

Employee inclusion and exclusion criteria. Employee records were eligible for analysis when the respondent was recorded as a member of the housekeeping staff at Hotel Atsari Parapat, provided complete responses to all six vertical-communication items (X1_1-X1_6) and all six horizontal-communication items (X2_1-X2_6), and had the analytical identifier required for the study data structure. Employee records were excluded from the corresponding analysis when one or more communication items required to calculate the X1 or X2 composite score were incomplete, or when the analytical identifier required for linkage and clustering was unavailable.

Guest inclusion and exclusion criteria. Guest records were eligible for analysis when the respondent was recorded as a hotel guest, provided complete responses to all six guest-satisfaction items (Y_1-Y_6), and had a valid employee grouping identifier recorded in the study data. Guest records were excluded from the corresponding inferential analysis when one or more satisfaction items required to calculate the Y composite score were incomplete or when the grouping identifier needed for the clustered analytical structure was missing or unusable.

Application of these eligibility and completeness criteria resulted in the final analytical sample of 24 housekeeping employees and 60 hotel guests. Composite scores were calculated only from complete six-item responses for the respective constructs, and no missing-value imputation was applied.

Sampling technique and respondent selection

A non-probability sampling strategy was used, with the approach differing between the two respondent groups. For housekeeping employees, total sampling (census sampling) was

applied: all 24 housekeeping employees who met the inclusion criteria and were available during the study period were included, so no further employee subsampling was conducted. For hotel guests, purposive sampling was used because respondents needed to have relevant experience of the hotel stay and housekeeping service and to satisfy the guest eligibility criteria. Eligible guests were recruited consecutively during the data-collection period until 60 complete questionnaires that met the analytical requirements had been obtained. Accordingly, the final study sample remained 24 housekeeping employees and 60 hotel guests. No random allocation or probability-based selection was used in either respondent group.

Sample-size rationale

The employee sample size was determined by total sampling of all 24 eligible housekeeping employees available during the study period. The guest sample comprised 60 complete questionnaires obtained through purposive consecutive recruitment. The sample-size rationale therefore followed the accessible study population and the complete-case analytical structure rather than a post hoc power calculation. Because the primary regression used employee-level predictors repeated across guest records, inferential precision was considered primarily in relation to the 24 employee clusters; the modest cluster count was therefore taken into account when interpreting statistical significance and confidence intervals (Lakens, 2022).

Recruitment and questionnaire administration

Housekeeping employees and hotel guests were recruited through separate procedures. For employees, the housekeeping staff roster was used to identify eligible personnel, and total sampling was applied. Eligible employees received a brief explanation of the study purpose and questionnaire-completion instructions before completing the employee questionnaire. The questionnaire contained the six vertical-communication items (X1_1-X1_6) followed by the six horizontal-communication items (X2_1-X2_6). Completed questionnaires were collected and checked for unanswered items and the analytical identifier required for data coding. Questionnaires that did not permit calculation of the X1 or X2 composite score or lacked the required identifier were excluded from the corresponding analysis. Application of this procedure resulted in 24 complete employee records.

Hotel guests were recruited on the premises of Hotel Atsari Parapat using purposive sampling with consecutive recruitment. Guests who satisfied the eligibility criteria and had relevant experience of the hotel stay and housekeeping service were approached sequentially during the data-collection period. After receiving brief instructions, eligible guests completed the six-item guest-satisfaction questionnaire (Y_1-Y_6). Returned questionnaires were checked for completeness and for the employee grouping identifier required for the clustered analysis. Questionnaires with one or more missing satisfaction items or an unusable grouping identifier were not included in the analytical dataset, and missing responses were not imputed. Recruitment continued until 60 complete and analytically eligible guest questionnaires had been obtained.

Data structure and cross-level analytical linkage

The employee-guest linkage was operationalized through a coded employee identifier preserved in the study dataset. The identifier served as the operational grouping variable used consistently during data coding to connect each guest questionnaire with the corresponding employee communication record for analytical matching and clustering. It was used only to organize the multilevel data structure and did not replace, average, or otherwise alter individual guest-satisfaction responses. Employee-level vertical- and horizontal-communication scores

were attached to guest observations within the corresponding identifier while each guest questionnaire remained an individual outcome record. Accordingly, the 60 guest responses formed 24 analytical clusters, with two or three guest observations per employee identifier; the guest records were not reduced to an analytical N of 24 in the primary regression. Cluster-robust standard errors were calculated by employee identifier to account for repeated use of the same employee-level predictors within clusters. As a sensitivity check, an additional employee-level model used mean guest satisfaction within each of the 24 clusters.

Measures, scoring, and instrument

The questionnaire comprised 18 positively scored items: six items measuring vertical communication (X1), six measuring horizontal communication (X2), and six measuring guest satisfaction (Y). All items used a five-point Likert response scale ranging from 1 (strongly disagree) to 5 (strongly agree). The content domains were informed by established concepts in internal communication, relational coordination, hotel service quality, and satisfaction research (Gittell, 2002; Oliver, 1980; Tkalac Verčič et al., 2021; Kalnaovakul & Promsivapallop, 2023) and were contextualized to housekeeping operations at Hotel Atsari Parapat. X1 assessed supervisory clarity, work information, upward reporting, feedback, work priorities, and role clarity. X2 assessed information exchange, task coordination, communication of room status and guest requests, mutual assistance, shift handover, and joint problem solving. Y assessed cleanliness, room presentation, service timeliness, comfort, fulfillment of expectations, and overall housekeeping satisfaction. Table 1 presents the operational wording and respondent group for each of the 18 items.

The individual guest served as the outcome-level analytical unit. Guest satisfaction was the dependent variable, while the vertical- and horizontal-communication scores associated with the employee grouping identifier served as predictors. Using different respondent groups for predictors and the outcome reduces same-source measurement overlap compared with a single-respondent design, although self-report and contextual response bias can still occur (Jordan & Troth, 2020).

Table 1. Operationalization of study variables

Construct	Code	Item statement	Respondent	Scale
Vertical communication	X1_1	My supervisor provides clear instructions regarding housekeeping duties.	Employees	Likert 1–5
Vertical communication	X1_2	I receive adequate work information from my supervisor to complete housekeeping tasks effectively.	Employees	Likert 1–5
Vertical communication	X1_3	I can report operational problems or guest-related issues to my supervisor.	Employees	Likert 1–5
Vertical communication	X1_4	My supervisor provides useful feedback regarding my work performance.	Employees	Likert 1–5
Vertical communication	X1_5	Work priorities are communicated clearly by the supervisor.	Employees	Likert 1–5
Vertical communication	X1_6	My responsibilities and role in housekeeping operations are clearly explained.	Employees	Likert 1–5
Horizontal communication	X2_1	Housekeeping employees exchange the information needed to perform their duties.	Employees	Likert 1–5
Horizontal communication	X2_2	Coordination among coworkers supports the completion of housekeeping tasks.	Employees	Likert 1–5
Horizontal communication	X2_3	Room-status information and guest requests are communicated effectively among coworkers.	Employees	Likert 1–5
Horizontal communication	X2_4	Coworkers provide mutual assistance when additional support is required.	Employees	Likert 1–5

Construct	Code	Item statement	Respondent	Scale
Horizontal communication	X2_5	Information about unfinished work is communicated clearly during shift handovers.	Employees	Likert 1–5
Horizontal communication	X2_6	Housekeeping employees work together to solve operational problems.	Employees	Likert 1–5
Guest satisfaction	Y_1	I am satisfied with the cleanliness of my hotel room.	Guests	Likert 1–5
Guest satisfaction	Y_2	The room is presented in a neat and orderly condition.	Guests	Likert 1–5
Guest satisfaction	Y_3	Housekeeping services are provided within an appropriate amount of time.	Guests	Likert 1–5
Guest satisfaction	Y_4	The condition of the room contributes to a comfortable stay.	Guests	Likert 1–5
Guest satisfaction	Y_5	The housekeeping service meets my expectations.	Guests	Likert 1–5
Guest satisfaction	Y_6	Overall, I am satisfied with the housekeeping service provided by the hotel.	Guests	Likert 1–5

Note. All 18 items are positively scored from 1 = strongly disagree to 5 = strongly agree. Each construct score is calculated as the mean of its six items. The item statements operationalize the communication and guest-satisfaction domains described in the Methods section and are contextualized to housekeeping operations.

Corrected item-total correlations and Cronbach's α were used to evaluate internal consistency using 24 employee responses for X1 and X2 and 60 guest responses for Y. Reliability was interpreted together with the magnitude and consistency of item-total correlations. Given the modest employee sample, reliability statistics were used as evidence of internal consistency rather than as a stand-alone test of construct dimensionality (Hayes & Coutts, 2020; McNeish, 2018).

Data completeness and scoring

Composite scores were calculated as the arithmetic mean of the six items assigned to each construct. Only complete records required for the corresponding analyses were included, and no value imputation was applied. Descriptive statistics for X1 and X2 were calculated from 24 unique employee records, while descriptive statistics for Y were calculated from 60 unique guest records.

Statistical analysis

Data coding and statistical analyses were performed using IBM SPSS Statistics. Descriptive statistics were reported as means, standard deviations, and observed ranges using unique respondents for each construct. The primary inferential analysis was multiple linear regression of guest satisfaction on vertical and horizontal communication, $Yi = a + B1X1i + B2X2i + ei$, estimated from 60 guest observations with cluster-robust standard errors across 24 employee identifiers. The CR1 finite-sample correction was applied, and two-sided coefficient tests and 95% confidence intervals used a t distribution with 23 degrees of freedom. The joint contribution of the two communication dimensions was evaluated using a cluster-adjusted Wald F test (Cameron & Miller, 2015).

Standardized coefficients were calculated to compare the relative magnitude of the two associations, while model fit was summarized using R^2 and adjusted R^2. Diagnostics examined variance inflation factors, residual normality, leverage, and Cook's distance. Robustness was evaluated using leave-one-employee-cluster-out analyses and an employee-level sensitivity regression based on mean satisfaction across guest records within each employee identifier. Because the design is cross-sectional, the regression coefficients are interpreted as associations rather than causal effects.

Model specification and covariates

The regression model included vertical and horizontal communication simultaneously so that each coefficient represented its association with guest satisfaction while accounting for the other communication dimension. Operational covariates that could also influence satisfaction, including occupancy, staffing level, workload, room condition, response time, and guest expectations, were not included in the analytical file. With 24 employee clusters, the principal model was therefore kept parsimonious to limit model instability and overfitting.

Ethical and confidentiality considerations

This study used a non-interventional, questionnaire-based academic design. Available study documentation indicates that respondents received a brief explanation of the study purpose and questionnaire-completion instructions before completing the questionnaire. The available documentation does not record a separate signed consent form or a formal ethics-approval number; accordingly, this manuscript does not claim written informed consent or institutional ethics approval that cannot be verified. No direct personal identifiers are presented in the manuscript. Employee and guest responses were coded for analysis, and findings are reported only in aggregate. This ethical-compliance statement is limited to procedures documented in the study materials and may be supplemented if the editorial office requires additional institution-specific documentation.

RESULTS AND DISCUSSION

Respondent profiles and scale properties

The analysis included 24 housekeeping employees and 60 hotel guests. Among employees, 14 (58.3%) were women, 11 (45.8%) were aged 25–35 years, 14 (58.3%) had secondary/vocational education, and 12 (50.0%) reported 2–5 years of tenure. Among guests, 33 (55.0%) were women, 31 (51.7%) were aged 25–40 years, 46 (76.7%) were domestic visitors, and 42 (70.0%) travelled for leisure. Length of stay ranged from one to five nights, with one-night stays representing the largest category (40.0%). Full distributions are shown in Table 2.

Table 2. Respondent characteristics

Group	Characteristic	Category	n	%
Employees	Sex	Female	14	58.3
		Male	10	41.7
Employees	Age	<25	5	20.8
		25–35	11	45.8
		36–45	6	25.0
		>45 years	2	8.3
Employees	Education	Secondary/Vocational	14	58.3
		Diploma	6	25.0
		Bachelor	4	16.7
Employees	Tenure	<2	5	20.8
		2–5	12	50.0
		6–10	5	20.8
		>10 years	2	8.3
Guests	Sex	Female	33	55.0
		Male	27	45.0
Guests	Age	<25	12	20.0
		25–40	31	51.7
		41–55	12	20.0
		>55 years	5	8.3

Group	Characteristic	Category	n	%
Guests	Origin	Domestic	46	76.7
		International	14	23.3
Guests	Travel purpose	Leisure	42	70.0
		Business	12	20.0
		Other	6	10.0
Guests	Nights stayed	1	24	40.0
		2	18	30.0
		3	10	16.7
		4	5	8.3
		5 nights	3	5.0

Table 3. Composite descriptive statistics and internal consistency

Construct	N	Min–max	Mean	SD	α	Corrected item-total r
Vertical communication	24	3.333–4.833	4.021	0.477	0.878	0.567–0.803
Horizontal communication	24	3.000–4.667	3.951	0.512	0.916	0.647–0.864
Guest satisfaction	60	2.833–4.833	3.872	0.446	0.880	0.652–0.759

All three constructs were rated above the scale midpoint. Vertical communication averaged 4.021 (SD = 0.477), horizontal communication 3.951 (SD = 0.512), and guest satisfaction 3.872 (SD = 0.446). Cronbach's α ranged from 0.878 to 0.916 and all corrected item-total correlations were positive. These values indicate exploratory internal coherence within each composite, but they should not be interpreted as evidence that dimensionality or construct validity has been established, particularly for the employee measures based on only 24 respondents.

Cluster-adjusted regression

Table 4. Guest-level regression with employee-clustered CR1 inference

Term	B	CR1 SE	β	t(23)	p	95% CI for B
Intercept	1.199	0.469	-	2.558	0.018	[0.229, 2.169]
Vertical (X1)	0.320	0.126	0.339	2.537	0.018	[0.059, 0.581]
Horizontal (X2)	0.346	0.109	0.392	3.185	0.004	[0.121, 0.571]

The regression results supported the three hypothesized associations. Vertical communication was positively associated with guest satisfaction after accounting for horizontal communication (B = 0.320, p = 0.018), and horizontal communication was positively associated with satisfaction after accounting for vertical communication (B = 0.346, p = 0.004). Both 95% confidence intervals excluded zero. The joint Wald test was significant ($F(2, 23) = 17.388$, $p < 0.001$), indicating that the two communication dimensions jointly accounted for variation in guest satisfaction.

The fitted model accounted for approximately 39.6% of the observed variation in guest-satisfaction scores (adjusted $R^2 = 0.375$). This value represents model fit within the study data and should not be interpreted as the percentage of satisfaction caused by communication. The standardized coefficient for horizontal communication (β = 0.392) was numerically larger than that for vertical communication (β = 0.339), suggesting that both forms of communication made meaningful contributions to the fitted model.

Diagnostics and sensitivity

Diagnostics indicated low multicollinearity (VIF = 1.295), no statistically detectable residual-normality departure (Shapiro-Wilk W = 0.965, p = 0.080), and limited single-observation influence (maximum leverage = 0.152; Cook's distance = 0.132). Leave-one-cluster-out coefficients remained positive for vertical (0.233–0.378) and horizontal communication (0.281–0.403), while an employee-level sensitivity model yielded coefficients of 0.315 and 0.340, respectively. These checks indicate that the direction of the estimated associations was not driven by a single employee cluster. They do not remove the uncertainty created by the modest number of clusters, but they provide a useful robustness check for the sign and approximate magnitude of the main coefficients.

Interpretation and theoretical implications

The positive vertical coefficient is consistent with H1 and with the view that supervisory communication functions as an operational resource rather than solely as an employee-relations process. Clear instructions, clarification of work priorities, feedback, and accessible upward-reporting channels can reduce ambiguity when housekeeping staff sequence tasks and respond to service problems. This pattern is consistent with hospitality research linking supervisor communication with employee satisfaction and organizational support (Čuić Tanković et al., 2022; Duarte & Silva, 2023) and with evidence that transparent internal communication strengthens employee-employer relationships and commitment (Liu-Lastres et al., 2024). In this study, higher vertical-communication scores were associated with higher guest-satisfaction scores within the employee-based cluster structure. Because the design is cross-sectional, the association should be interpreted as relational rather than causal.

The positive horizontal coefficient is consistent with H2 and with relational-coordination arguments for interdependent service work. Housekeeping activities require rapid transfer of room status, guest requests, unfinished work, and problem information across coworkers and shifts. Prior hospitality research indicates that informal communication and communication platforms can facilitate knowledge sharing, coordination, and work-related information exchange (Guo & Ayoun, 2025; Shi et al., 2024), while supportive peer communication is associated with more favorable employee emotional and engagement outcomes (Zheng et al., 2025). In the present study, stronger peer-coordination scores were associated with higher guest satisfaction. Operationally, effective horizontal communication can support handovers, mutual assistance, and joint problem solving, which are essential to consistent housekeeping service.

The significant joint Wald test and model R^2 of 0.396 are consistent with H3. The two communication variables jointly accounted for a substantial share of observed variation in guest satisfaction, while the remaining variation underscores the multidimensional nature of hotel satisfaction. Recent primary empirical hospitality studies likewise show that guest evaluations are shaped by multiple operational and interactional service attributes, including frontline encounters, room/service quality and communication surrounding housekeeping routines (McCullough et al., 2024; Meng & Lai, 2025; Perdomo-Verdecia et al., 2024; Shin et al., 2024; Zinn et al., 2024). The present findings therefore position communication as one important element within a broader service-production system.

Theoretically, the analysis connects internal-communication and relational-coordination perspectives with a guest-level service outcome. Much hospitality communication research evaluates employee attitudes, engagement, voice, or turnover-related outcomes; the present model places employee-level communication scores alongside guest-level satisfaction within a clustered analytical structure. This supports a cross-level explanation in which communication quality contributes to the execution of interdependent housekeeping work and is subsequently reflected in guest evaluations. Vertical and horizontal communication appear complementary: supervisory channels organize priorities, feedback, and escalation, whereas peer channels sustain coordination across shared tasks and handovers. The cross-sectional design, however, does not establish temporal causality and should be followed by longitudinal or intervention-based research.

Managerial implications

Managerially, the analysis identifies three practices that are reasonable candidates for monitoring and future evaluation: short structured briefings that clarify priorities and responsibilities, standardized handovers that record incomplete tasks and ownership, and reciprocal feedback channels that allow unresolved problems to be escalated quickly. Hotels can track these practices alongside room-readiness delays, unresolved requests, service-response time, and guest-satisfaction scores. Their effectiveness should be evaluated prospectively using longitudinal or quasi-experimental designs where feasible.

Limitations

This study has several limitations. First, the analysis was conducted in a single hotel and involved only 24 employee clusters, limiting the generalizability and precision of cluster-adjusted inference. Second, employee communication measures were self-reported, and the employee sample was too small for extensive psychometric modeling beyond internal-consistency assessment. Third, the cross-sectional design does not establish the temporal sequence required for causal inference. Fourth, operational factors such as occupancy, staffing, workload, room condition, response time, and guest expectations were not included as covariates and may account for additional variation in satisfaction. Future studies should involve multiple hotels, larger employee samples, objective operational indicators, and longitudinal or quasi-experimental designs to test whether improvements in briefing, feedback, and handover practices lead to measurable changes in guest outcomes.

CONCLUSIONS

In this cross-level analysis, vertical and horizontal housekeeping communication were positively associated with guest satisfaction at Hotel Atsari Parapat, and the fitted model accounted for approximately 39.6% of the observed variation in satisfaction scores. The findings indicate that supervisory clarity, feedback, peer coordination, mutual assistance, and accountable handovers are important communication resources in housekeeping operations. Horizontal communication showed a slightly larger standardized coefficient than vertical communication, although both dimensions contributed positively to the model. For hotel management, short structured briefings, standardized shift handovers, and reciprocal reporting channels can be strengthened alongside routine monitoring of room readiness, response time,

unresolved requests, and guest feedback. These conclusions should nevertheless be interpreted within the constraints of a single-hotel setting, a cross-sectional design that cannot establish temporal causality, and only 24 employee clusters, which limit generalizability and the precision of clustered inference. Future research should extend the model across multiple properties and time periods, incorporate operational covariates and objective service indicators, and apply longitudinal or intervention-based designs to examine the direction and durability of these relationships.

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