

The Influence of Digital Guest Interaction and Human Interaction on Guest Experience at Aston Nagoya City Hotel

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ABSTRACT

This study examined the effects of digital guest interaction and human interaction on guest experience at Aston Nagoya City Hotel, Batam. A quantitative method with a causal-associative approach was applied. Data were collected through a Likert-scale questionnaire distributed to 178 guests using purposive sampling, of which 177 responses met the criteria for analysis. Multiple linear regression was used to test the hypotheses with the help of SPSS 25.00. The results showed that digital guest interaction had a positive and significant effect on guest experience ($t = 5.538$; Sig. = 0.000), while human interaction also had a positive and significant effect ($t = 8.943$; Sig. = 0.000). Simultaneously, both variables significantly influenced guest experience ($F = 184.616$; Sig. = 0.000), with an adjusted R square of 0.676, indicating that 67.6% of the variance in guest experience was explained by the two variables. Human interaction demonstrated a relatively stronger influence than digital guest interaction. The findings suggest that maintaining the quality of digital services and strengthening direct interaction may be relevant considerations for Aston Nagoya City Hotel in supporting a positive guest experience.

Article Information

Keywords:

Digital guest interaction; Human interaction; Guest experience; Layanan hotel; Manajemen perhotelan.

ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh *digital guest interaction* dan *human interaction* terhadap *guest experience* di Aston Nagoya City Hotel, Batam. Metode yang digunakan adalah kuantitatif dengan pendekatan asosiatif kausal. Data dikumpulkan melalui kuesioner skala Likert yang disebar kepada 178 tamu menggunakan teknik *purposive sampling*, dan sebanyak 177 responden memenuhi kriteria untuk dianalisis. Analisis regresi linear berganda digunakan untuk menguji hipotesis dengan bantuan SPSS 25.00. Hasil penelitian menunjukkan bahwa *digital guest interaction* berpengaruh positif dan signifikan terhadap *guest experience* ($t = 5,538$; Sig. = 0,000), demikian pula *human interaction* berpengaruh positif dan signifikan ($t = 8,943$; Sig. = 0,000). Secara simultan, kedua variabel berpengaruh signifikan terhadap *guest experience* ($F = 184,616$; Sig. = 0,000) dengan nilai *adjusted R square* sebesar 0,676, yang berarti 67,6% variasi *guest experience* dijelaskan oleh kedua variabel tersebut. *Human interaction* terbukti memiliki pengaruh yang relatif lebih kuat dibandingkan *digital guest interaction*. Temuan ini mengindikasikan bahwa menjaga kualitas layanan digital dan memperkuat interaksi langsung dapat menjadi pertimbangan yang relevan bagi Aston Nagoya City Hotel dalam mendukung pengalaman tamu yang positif.

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1. Introduction

Batam City is one of the important areas in the Riau Islands Province with a strategic role in Indonesia's tourism sector. Its proximity to Singapore and Malaysia makes Batam the main gateway for international tourists, with a high contribution of foreign tourist arrivals to the province [1]. Until 2024, there are 90 star hotels and 96 non-star hotels operating in Batam City [2]. The growth in the number of hotels is accompanied by digital transformation in operational and service aspects, including *mobile check-in*, data-based services, *online transactions*, to the use of artificial intelligence (AI) and the *Internet of Things* (IoT) to support a responsive industry that focuses on guest experience [3].

The speed and reliability of the *online* reservation system has proven to have a significant impact on *hotel occupancy* rates [4], but the application of digital technology cannot be separated from challenges such as limited infrastructure, inadequate human resources, and high investment costs, especially for small and medium-sized hotels. On the other hand, reliance on technology has the potential to reduce the quality of personal interaction between employees and guests, even though *human touch* is still needed in situations that require empathy and personal problem-solving.

Guest experience is understood as the accumulation of all interactions experienced by guests from before arrival to after leaving the hotel, which is influenced not only by the quality of core service, but also by the physical environment, service system, and interaction with the hotel [5]. As a multidimensional construct, *guest experience* includes cognitive, emotional, sensory, and social experiences [6]. Digitalization in the *hospitality* industry allows for a more efficient and integrated experience [7], while guest experience of technology is also influenced by cognitive, emotional, and user-friendly aspects of the system [8]. However, social interaction between employees and guests still has a significant effect on the quality of experience and customer satisfaction [9].

At Aston Nagoya City Hotel, initial observations showed that the implementation of *digital guest interaction* was not fully optimal due to system constraints and limited guest understanding while the quality of *Front Office service* was also inconsistent, as seen from complaints related to slow response. This condition is the background for the question of the extent to which *digital guest interaction* and *human interaction* together form the *guest experience* for hotel guests.

Based on the description above, the formulation of this research problem is: (1) how does *digital guest interaction* affect *guest experience*; (2) how *human interaction* affects the *guest experience*; and (3) how the two variables simultaneously affect the *guest experience* at Aston Nagoya City Hotel. This study aims to analyze these three influences, with the following hypothesis:

- H1: *Digital guest interaction* significantly and positively predicts *guest experience*.
H2: *Human interaction* significantly and positively predicts *guest experience*.
H3: *Digital guest interaction* and *human interaction* jointly significantly predict the *guest experience*.

The conceptual framework of the study places *digital guest interaction* (X1) and *human interaction* (X2) as independent variables that partially or simultaneously are suspected to affect *guest experience* (Y) as dependent variables. This framework is based on the view that digital services provide convenience, speed, and efficiency of access to services [10], while human interaction provides a personal touch, empathy, and attention that makes guests feel valued [11] two elements that complement each other, not replace each other, in shaping an optimal guest experience [12].

2. Research Methods

This study employed a quantitative cross-sectional design using multiple linear regression to examine the predictive relationships between digital guest interaction, human interaction, and guest experience, which is a method used to research a specific population or sample with research instruments and statistical data analysis to test the hypothesis that has been established [13]. The research was carried out at Aston Nagoya City Hotel, Batam City, Riau Islands Province, in June–July 2026.

The research involved two independent variables, namely digital guest interaction (X1) and human interaction (X2), as well as one dependent variable, namely guest experience (Y). Digital guest interaction is defined as guest interaction with hotel services based on digital technology which is measured through indicators of ease of use, speed of response, clarity of information, system reliability, security, and comfort of use. Human interaction is defined as direct interaction between employees and guests measured through indicators of hospitality, communication, responsiveness, empathy, and personal attention. Guest experience is measured through indicators of satisfaction, expectation, comfort, interaction experience, and overall experience.

Table 1 Research Instrument Grid

No.	Variable	Indicator	No. of Items	Example Questionnaire Item
1	Guest Experience (Y)	Satisfaction	1	I feel satisfied during my stay at the hotel.
		Expectation Fulfillment	2	The hotel's services meet my expectations before my stay.

No.	Variable	Indicator	No. of Items	Example Questionnaire Item
		Comfort	2	The hotel's facilities provide comfort during my stay.
		Interaction Experience	2	My interactions with hotel employees provide a pleasant experience.
		Overall Experience	2	I have a positive experience during my stay at the hotel.
2	Digital Guest Interaction (X1)	Ease of Use	2	The hotel's digital system is easy to understand and use.
		Response Speed	2	The hotel's digital services respond quickly to my needs.
		Information Clarity	2	The information provided through the hotel's digital services is easy to understand.
		System Reliability	2	The hotel's digital system can be used properly without experiencing disruptions.
		Security	2	I feel that my personal data is secure when using the hotel's digital services.
		User Comfort	2	The hotel's digital services make it easier for me to obtain services.
3	Human Interaction (X2)	Friendliness	2	Hotel employees serve me in a friendly manner.
		Communication	2	Hotel employees provide information clearly and in an easy-to-understand manner.
		Responsiveness	2	Hotel employees respond quickly when I need service.

No.	Variable	Indicator	No. of Items	Example Questionnaire Item
		Empathy	2	Hotel employees understand my needs as a guest.
		Professionalism	2	Hotel employees provide services in accordance with professional standards.

Source: Personal compilation

The study population was all guests who had stayed at Aston Nagoya City Hotel. Samples were taken using *the purposive sampling technique*, namely guests who were met and willing to fill out a questionnaire. The questionnaire was distributed to 178 respondents with 30 statements on a Likert scale of 1–5 (Strongly Disagree–Strongly Agree); After being sorted based on respondent criteria, 177 data that are worth analysis were obtained. Primary data is obtained from questionnaires, while secondary data is obtained from books, scientific journals, and other supporting documents.

Data analysis was carried out with the help of SPSS 25.00 through three stages. *First*, the descriptive analysis used the Respondent Achievement Level (TCR) to categorize respondents' assessments into five interval classes (Excellent: 4.21–5.00; Good: 3.41–4.20; Adequate: 2.61–3.40; Low: 1.81–2.60; Very Less: 1.00–1.80) [13]. *Second*, the classical assumption test which includes the normality test (*Kolmogorov-Smirnov*), the multicollinearity test (*Variance Inflation Factor* / VIF value), and the heteroscedasticity test (Glejser test). *Third*, multiple linear regression analysis and hypothesis testing using t-test (partial), F-test (simultaneous), and determination coefficient (R^2). The regression equation model used is:

$$Y = a + b_1X_1 + b_2X_2 + e(1)$$

where Y is *the guest experience*, a is the constant, b_1 and b_2 are the regression coefficients of X1 and X2, and e is the error rate. The hypothesis testing criteria stipulate that independent variables are declared to have a significant effect if the significance value is ≤ 0.05 [14].

3. Results and Discussion

3.1 Characteristics of Respondents

Of the 178 questionnaires distributed. The characteristics of the respondents are summarized in Table 1.

Table 2 Characteristics of respondents Aston Nagoya City Hotel (n = 178)

Characteristics	Categories	Quantity	Percentage
Gender	Male	87	48,9%
	Women	91	51,1%
Age	19–25 years old	57	32,0%
	26–35 years old	70	39,3%
	36–45 years old	45	25,3%
	>46 years old	6	3,4%
Jobs	Private employees	64	36,0%
	Entrepreneur/Entrepreneur	39	21,9%
	Students/students	31	17,4%
	Civil Servants/ASN	28	15,7%
	Professional	16	9,0%
Income	IDR 4,000,000–6,000,000	77	43,4%
	<IDR 4.000.000	39	21,9%
	IDR 7.000.000–9.000.000	37	20,8%
	>IDR 10.000.000	25	14,0%

Source: Research data processing, 2026

The demographic characteristics of respondents were presented descriptively but were not included as covariates in the regression model. Variables such as age, occupation, income, and gender may potentially influence guests' perceptions and experiences with digital and interpersonal hotel services. Therefore, the possibility of demographic confounding cannot be completely excluded. Future studies should consider incorporating relevant demographic characteristics as control variables to examine whether the relationships between digital guest interaction, human interaction, and guest experience remain stable after demographic adjustment.

The majority of respondents were female (51.1%), aged 26–35 years old (39.3%), working as private employees (36.0%), and earning IDR 4,000,000–6,000,000 (43.4%). As many as 99.4% of respondents were recorded to have stayed at Aston Nagoya City Hotel, confirming that respondents had first-hand experience relevant to the object of the study.

3.2 Description of Research Variables

The results of descriptive analysis and Respondent Achievement Level (TCR) for the three variables are presented in Table 2.

Table 3 Description of the statistics and achievement rate of respondents per variable

Variable	Red	Std. Deviation	Min–Max	Average TCR	Categories
Digital Guest Interaction (X1)	50,81	3,115	39–60	4,23	Excellent
Human Interaction (X2)	33,82	2,429	21–40	4,23	Excellent

Variable	Red	Std. Deviation	Min–Max	Average TCR	Categories
Guest Experience (Y)	42,27	2,710	30–50	4,23	Excellent

Source: Research data processing, 2026

All three variables obtained the excellent category with an average TCR of 4.23. In the *Digital Guest Interaction* variable, indicators of ease of use, clarity of information, system reliability, and user comfort are in the very good category, while the speed of response and security are still in the good category. In the *Human Interaction* variable, all indicators (friendliness, communication, responsiveness, empathy) are in the range of good to very good. In the *Guest Experience* variable, the indicators of satisfaction and interaction experience are classified as very good, while the suitability of expectations and overall experience is still in the good category, indicating room for improvement in the aspect of meeting guest expectations.

3.3 Classical Assumption Test

Before the regression test, three classical assumption tests were performed. The results are summarized in Table 3.

Table 4 Summary of the results of the classical assumption test

Test	Indicator	Value	Criteria	Conclusion
Normality (Kolmogorov-Smirnov)	Asymp. Sig. (2-tailed)	0,200	> 0.05	Normally distributed residual
Multicollinearity	VIF X1 / X2	2,036 / 2,036	< 10	Multicollinearity does not occur
Heteroscedasticity (Glejser)	Sig. X1 / X2	0,282 / 0,966	> 0.05	Heteroscedasticity does not occur

Source: Research data processing, 2026

All three test results show that the data are eligible for further analysis using multiple linear regression without violation of classical assumptions.

3.4 Regression Results and Hypothesis Testing

The results of multiple linear regression analysis along with partial hypothesis testing (t-test) are presented in Table 4.

Table 5 Results of multiple linear regression analysis and t-test

Models	B	Std. Error	Beta	t	Sig.
(Constant)	6,614	1,938	–	3,413	0,001
Digital Guest Interaction (X1)	0,295	0,053	0,339	5,538	0,000
Human Interaction (X2)	0,611	0,068	0,548	8,943	0,000

Dependent variable: Guest Experience. Source: Research data processing, 2026

The regression equations formed are:

$$Y = 6,614 + 0,295X1 + 0,611X2(2)$$

A constant value of 6.614 indicates that if X1 and X2 are zero, the *guest experience* is estimated to remain at 6.614. The regression coefficient of X1 of 0.295 (Sig. 0.000 < 0.05; $t = 5.538$) indicating a positive and statistically significant predictive relationship between digital guest interaction and guest experience, so **H1 was accepted**. The regression coefficient of X2 of 0.611 (Sig. 0.000 < 0.05; $t = 8.943$) indicating a positive and statistically significant predictive relationship between human interaction and guest experience, so **H2 was accepted**.

Simultaneous testing (F test) resulted in an F count of 184.616 with a Sig. of 0.000 < 0.05, so that *digital guest interaction* and *human interaction* jointly provided a statistically significant prediction of *guest experience* and **H3 was accepted**. A determination coefficient (*adjusted R square*) of 0.676 showed that the two independent variables were able to explain 67.6% of the variation in *guest experience*, while the remaining 32.4% were influenced by other factors outside of this study model.

Comparison of *Standardized Beta* values shows that *human interaction* (0.548) has a relatively stronger influence than *digital guest interaction* (0.339) on *guest experience*.

3.5 Discussion

The Influence of Digital Guest Interaction on Guest Experience. The finding that *digital guest interaction* has a positive and significant effect is in line with the view that digitalization in the *hospitality* industry allows for the creation of a more efficient and integrated guest experience [7]. An excellent TCR score (4.23) on indicators of ease of use, clarity of information, system reliability, and user comfort confirms that Aston Nagoya City Hotel's digital services are positively rated by guests, in line with the findings that the ease of use of the system contributes to the overall quality of guest technology experience [8]. These results are also consistent with previous research showing that the application of digital technology in the *hospitality* industry improves service efficiency while supporting improved guest experience [15][10]. However, the indicators of response speed and security, which are still in the good category, indicate the need for continuous improvement in these two aspects so that the quality of digital interaction is more optimal.

The Influence of Human Interaction on Guest Experience. *Human interaction* has also been shown to have a positive and significant effect, in line with the findings that social interaction between employees and customers in *hospitality services* affects the quality of experience and customer satisfaction [9]. Even though digital technology continues to evolve, *human touch* is still needed, especially in situations that demand empathy, problem-solving, and a personal touch [11], so that technology does not completely replace the role of employees. These findings also reinforce the results of research showing that responsive communication

of service and problem-solving by staff contributes to the creation of a memorable stay experience [16]. The higher *Standardized Beta* value in *human interaction* compared to *digital guest interaction* confirms that direct interaction between employees and guests through hospitality, communication, responsiveness, and empathy contributes relatively greater in shaping the guest experience at this hotel.

Simultaneous Influence on Guest Experience. The significant simultaneous influence of *digital guest interaction* and *human interaction* on the *guest experience* supports the view that guest experience is formed by a combination of factors, including the ease of digital services and the psychological aspects felt by guests [12]. In line with this, friendly and effective interpersonal interaction from hotel staff has also been shown to contribute significantly to improving the guest experience [10]. These findings reinforce the understanding that *guest experience* is not only influenced by the quality of core services, but also by the physical environment, service system, and guest interaction with hotels [5]. With an *adjusted R square* value of 0.676, it can be concluded that digital services and human interaction are not two elements that replace each other, but complement each other in shaping an optimal, personal, and memorable stay experience for Aston Nagoya City Hotel guests.

The significant joint relationship between digital guest interaction and human interaction with guest experience indicates that the two predictors collectively provide substantial explanatory value in the observed data. However, the adjusted R^2 of 0.676 should not be interpreted as evidence that these variables causally determine 67.6% of guest experience. Because the study used a cross-sectional design, the temporal ordering between the predictors and outcome could not be established. In addition, the remaining 32.4% of unexplained variance suggests that other factors not included in the model may contribute to guest experience, such as physical facilities, service quality, price-value perceptions, atmosphere, or individual guest characteristics. Therefore, the findings should be interpreted as evidence of a strong statistical association and predictive relationship within the study context rather than definitive causal effects.

4. Conclusion

The results of this study show that digital guest interaction and human interaction the findings indicate that digital guest interaction and human interaction are positively and significantly associated with guest experience and provide significant predictive value in the regression model. Because the study used a cross-sectional design, these findings should not be interpreted as definitive evidence of causal relationships at Aston Nagoya City Hotel. Digital interaction provides convenience, efficiency, and accessible information for guests, while human interaction strengthens the personal aspect of service through friendliness, responsiveness, empathy, and

attention. Among the two, human interaction provides a stronger contribution to the guest experience, indicating that personal contact remains important despite the increasing use of digital technology.

Because this study employed a cross-sectional design, the findings do not establish temporal precedence between the predictor variables and guest experience. Therefore, the significant regression results should be interpreted as statistical associations and predictive relationships rather than definitive evidence of causal effects. Other factors that were not included in the research model may also contribute to guest

experience. Future studies may employ longitudinal or experimental designs to provide stronger evidence regarding causal relationships between digital guest interaction, human interaction, and guest experience.

Overall, digital guest interaction and human interaction complement each other in creating a positive and memorable guest experience. Therefore, the hotel needs to maintain reliable digital services while continuously strengthening the quality of direct interaction between employees and guests. Technology should function as a supporting element of hospitality service rather than replacing the human touch.

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