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## **Impact of digital transformation factors on business performance of 5-star hotels in Ho Chi Minh City, Vietnam**

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**Abstract.** This study analyzes the impact of digital transformation factors on the business performance of 5-star hotels in Ho Chi Minh City. Based on the Resource-Based View (RBV) theory and Dynamic Capabilities Theory, the research model proposes five constituent factors of digital transformation including: technological infrastructure, process digitalization, data analytics, digital service innovation, and innovation capability. Data were collected through surveys of hotel managers and processed using multiple linear regression method. The results show that all factors have positive and statistically significant impacts on business performance of 5-star hotels in Ho Chi Minh City, among which technological infrastructure and data analytics have the strongest influence. The study provides empirical evidence on the strategic role of digital transformation in enhancing competitiveness and sustainable development of high-end hotel enterprises in general and in Ho Chi Minh City, Vietnam in particular.

**Keywords.** digital transformation; business performance; 5-star hotels

### **1. Introduction**

In the context of the Fourth Industrial Revolution unfolding extensively, digital transformation has become a strategic driver promoting business model innovation and enhancing enterprise competitiveness (Schwab, 2016). For the hotel industry, the development of digital technology, Big Data, artificial intelligence (AI), and online booking platforms has fundamentally changed the way value is created and delivered to customers (Buhalis & Leung, 2018). Research by Verhoef et al. (2021) suggests that digital transformation is not merely technology application but a comprehensive restructuring process of strategy, processes, and organizational culture aimed at improving operational performance.

In Ho Chi Minh City Vietnam's largest economic and tourism center – the 5-star hotel segment plays a crucial role in serving international tourists, MICE guests, and high-level business travelers. However, this market is under intense competitive pressure, especially after global fluctuations and dramatic changes in tourism consumption behavior (UNWTO, 2023). International studies show that digital transformation positively impacts financial performance, operational efficiency, and customer satisfaction in the accommodation sector (Elia et al., 2020; Vial, 2019). Nevertheless, empirical evidence in developing economies, including Vietnam, remains limited and lacks quantitative models testing this relationship.

Proceeding from the aforementioned research gap, this study focuses on analyzing the impact of digital transformation factors on the business performance of 5-star hotels in Ho Chi Minh City through a quantitative research model. The research results are expected to contribute empirical evidence to digital transformation theory in the hospitality service industry, while providing managerial implications for enhancing competitiveness and sustainable development in the context of digitalized business.

## **2. Research Methodology**

This study was conducted using a quantitative method to test the relationship between digital transformation and business performance of 5-star hotels in Ho Chi Minh City. The research procedure consisted of two main stages: (1) preliminary research and (2) formal research.

In the preliminary research stage, the author conducted a literature review of previous studies on digital transformation (Vial, 2019; Verhoef et al., 2021) and business performance in the hospitality service industry, thereby proposing a research model and developing measurement scales for the concepts. The scales were inherited and adjusted from highly reliable international studies, using a 5-point Likert scale. Expert interviews and small group discussions were conducted to adjust the questionnaire content, ensuring suitability with the Vietnamese research context.

The formal research stage employed a structured questionnaire survey method, with the survey subjects being middle-level and senior managers at 5-star hotels in Ho Chi Minh City. Convenience sampling combined with purposive sampling technique was applied due to limitations in accessing the research population. Collected data were processed using SPSS software. Data analysis steps included: (i) testing scale reliability using Cronbach's Alpha coefficient; (ii) exploratory factor analysis (EFA) to determine the structure of latent variables and reduce observed variables; and (iii) multiple linear regression analysis to test the extent and direction of impact of digital transformation factors on business performance of 5-star hotels.

After the scales met reliability and validity requirements, representative variables (mean values of scales or factor scores) were entered into the regression model. Before estimation, the study tested the assumptions of the regression model including: multicollinearity (through VIF coefficient), residual autocorrelation (Durbin-Watson), normal distribution of errors, and homoscedasticity.  $R^2$  and adjusted  $R^2$  coefficients were used to evaluate the model's explanatory power; standardized regression coefficients (Beta) and Sig. values were used to test the statistical significance of research hypotheses at the 5% significance level. Multiple linear regression was chosen due to its suitability in measuring the influence of multiple independent variables on one dependent variable in the context of business administration research, while ensuring transparency and intuitive interpretability of results (Hair et al., 2019).

The analysis results are expected to provide empirical evidence on the role of digital transformation in enhancing business performance of high-end hotels, while ensuring reliability and scientific validity of the proposed research model.

## **3. Theoretical Foundation**

The theoretical foundation of the study is built upon theories of enterprise resources, technological innovation, and organizational digital transformation. First, the Resource-Based View (RBV) theory posits that sustainable competitive advantage of enterprises stems from possessing and effectively exploiting valuable, rare, inimitable, and non-substitutable resources (Barney, 1991). In the context of digitalization, technological capabilities, data, and the ability

to integrate digital systems are considered strategic resources that help enterprises enhance operational performance.

Additionally, the Dynamic Capabilities Theory emphasizes the enterprise's ability to adapt, restructure, and innovate resources to suit a changing environment (Teece, Pisano, & Shuen, 1997). Digital transformation in 5-star hotels is not merely technology investment but also a process of restructuring operational processes, enhancing customer experience, and innovating business models. Therefore, dynamic capabilities play an important mediating role between digital transformation and business performance.

Furthermore, the study also inherits perspectives on digital transformation at the organizational level. According to Vial (2019), digital transformation is the process of changing organizational strategy and structure through the application of digital technologies to create superior value. Verhoef et al. (2021) argue that digital transformation affects enterprise performance through improving operational efficiency, enhancing innovation capability, and increasing customer satisfaction.

Based on the integration of the above theories, the study proposes that digital transformation – as a strategic capability – positively impacts the business performance of 5-star hotels through cost optimization, revenue increase, and service quality improvement.

#### **4. Literature Review and Research Model**

##### **4.1. Literature Review**

Studies on digital transformation in the hospitality service sector mainly focus on the role of digital technology in enhancing customer experience, optimizing operations, and improving financial performance. According to Vial (2019), digital transformation helps enterprises restructure processes and business models, thereby creating new value and improving organizational performance. In the hotel industry, the application of Property Management Systems (PMS), customer data analytics, artificial intelligence, and service automation has been proven to positively impact service quality and customer satisfaction levels (Buhalis & Leung, 2018).

Additionally, Verhoef et al. (2021) emphasize that the impact of digital transformation on enterprise performance is not only direct but also through improving innovation capability and strategic adaptability. Some empirical studies in the hotel sector show that the level of digital technology application has a positive relationship with room revenue, occupancy rates, and overall operational performance (Elia et al., 2020). However, studies in developing economies remain limited, particularly quantitative research testing regression models in the context of 5-star hotels in Vietnam.

From the above literature review, it can be seen that although there have been many studies on digital transformation and business performance, there still exists a gap in empirical evidence in specific local contexts, requiring a study testing practices in Ho Chi Minh City.

##### **4.2. Proposed Research Model**

Based on the Resource-Based View (RBV) theory (Barney, 1991) and Dynamic Capabilities Theory (Teece et al., 1997), the study proposes that digital transformation is considered a strategic resource and dynamic capability of hotel enterprises. Accordingly, the digital transformation factors include: (i) technological infrastructure, (ii) process digitalization, (iii) data analytics, (iv) digital service innovation, and (v) innovation capability positively impact the business performance of 5-star hotels in Ho Chi Minh City, Vietnam. The proposed regression model is as follows:

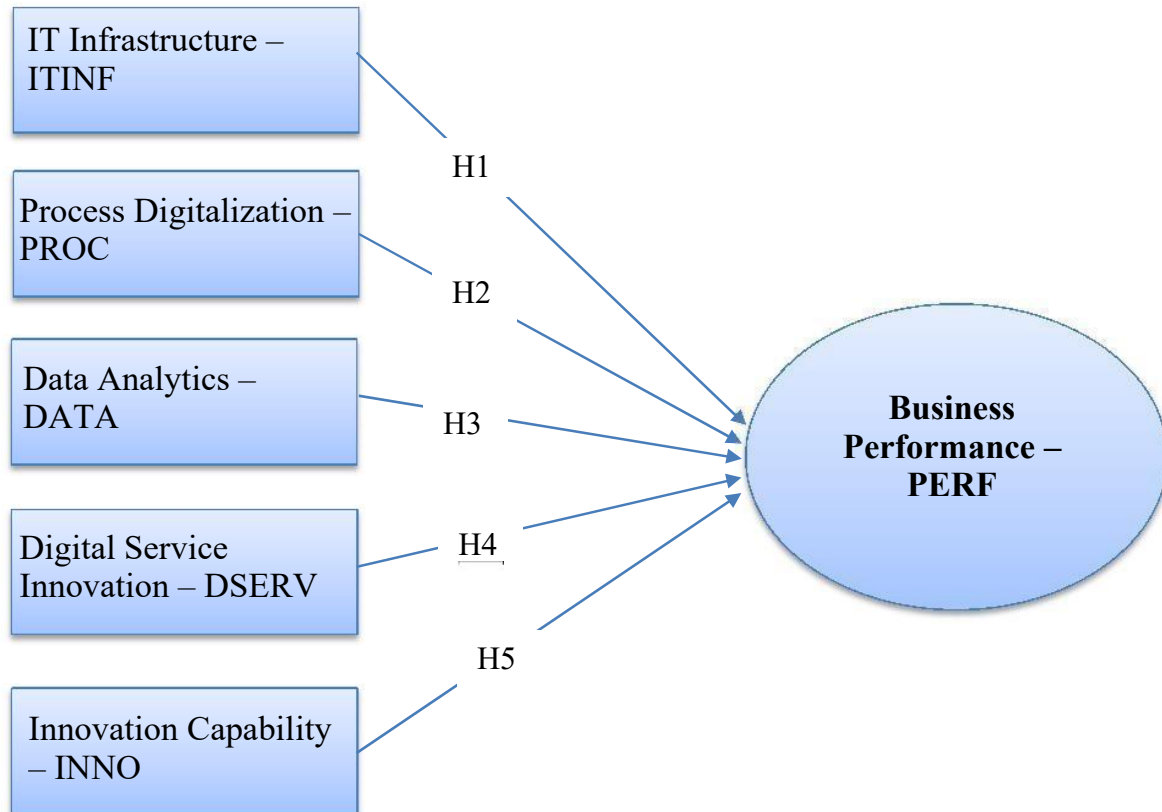


Figure 1: Proposal research model

### Research Hypotheses:

Based on the Resource-Based View (RBV) theory and Dynamic Capabilities Theory, the study proposes that the constituent factors of digital transformation and innovation capability play the role of strategic resources, capable of enhancing business performance of high-end hotel enterprises. Specifically, five independent variables are expected to have positive impacts on the business performance of 5-star hotels in Ho Chi Minh City, Vietnam, including:

*H1: Technological infrastructure has a positive impact on the business performance of 5-star hotels in Ho Chi Minh City.*

*H2: Process digitalization has a positive impact on the business performance of 5-star hotels in Ho Chi Minh City.*

*H3: Data analytics has a positive impact on the business performance of 5-star hotels in Ho Chi Minh City.*

*H4: Digital service innovation has a positive impact on the business performance of 5-star hotels in Ho Chi Minh City.*

*H5: Innovation capability has a positive impact on the business performance of 5-star hotels in Ho Chi Minh City.*

### Research Scales:

Below is the system of proposed scales for the research model. The scales are constructed in reflective form, using a 5-point Likert scale (1 = Strongly disagree; 5 = Strongly agree), inherited and adjusted from studies on digital transformation, innovation capability, and enterprise performance in the service sector.

**IT Infrastructure Scale (ITINF):**

ITINF1: The hotel has modern and synchronous information technology systems.

ITINF2: Management software systems (PMS, ERP, CRM...) are effectively integrated.

ITINF3: Technological infrastructure ensures high data security and safety.

ITINF4: The technology system has the capability for flexible expansion and upgrading.

**Process Digitalization Scale (PROC):**

PROC1: Booking and payment processes are fully digitalized.

PROC2: Internal operational activities are managed through digital platforms.

PROC3: The hotel applies technology to automate service processes.

PROC4: Information exchange between departments is conducted on digital systems.

**Data Analytics Scale (DATA):**

DATA1: The hotel regularly collects and stores customer data.

DATA2: Data is used for demand forecasting and room price optimization.

DATA3: Management uses data analysis reports in decision-making.

DATA4: The data analytics system helps personalize customer experience.

**Digital Service Innovation Scale (DSERV):**

DSERV1: The hotel provides digital services (online check-in, mobile key...).

DSERV2: Digital platforms are used to enhance customer experience.

DSERV3: The hotel regularly updates and improves digital services.

DSERV4: Digital technology helps create new service packages suitable for customer needs.

**Innovation Capability Scale (INNO):**

INNO1: The hotel encourages employees to propose new ideas.

INNO2: The enterprise has the ability to quickly implement new initiatives.

INNO3: The hotel regularly improves processes and services.

INNO4: Management strongly supports innovation activities.

**Business Performance Scale (PERF):**

PERF1: The hotel's revenue has grown steadily in recent years.

PERF2: Profit meets or exceeds set targets.

PERF3: Room occupancy rate and operational performance have improved.

PERF4: Customer satisfaction level is high.

PERF5: The hotel maintains competitive advantage in the market.

**5. Research Results**

The results of multiple linear regression analysis show that the research model is statistically significant, in which the independent variables including DATA, PROC, DSERV, ITINF, and INNO all impact the dependent variable at the 5% significance level.

Specifically, the unstandardized regression coefficients (B) show that all variables have a positive impact on the dependent variable. The variable **ITINF** has the strongest impact (B = 0.363; Beta = 0.362; Sig. = 0.000), followed by **DATA** (B = 0.306; Beta = 0.282; Sig. = 0.000) and **INNO** (B = 0.249; Beta = 0.267; Sig. = 0.000). The two variables **DSERV** (B = 0.187; Beta = 0.136; Sig. = 0.009) and **PROC** (B = 0.208; Beta = 0.117; Sig. = 0.006) also have positive and statistically significant influences.

The Sig. values of all independent variables are less than 0.05, proving that the corresponding research hypotheses are accepted. Meanwhile, the model constant is not statistically significant (Sig. = 0.123 > 0.05).

**Table 1: Regression Analysis Results**

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Độ lệch chuẩn	Beta		
1	Hằng số	0.396	0.255		1.550	0.123
	DATA	0.306	0.060	0.282	5.127	0.000
	PROC	0.208	0.065	0.117	3.201	0.006
	DSERV	0.187	0.077	0.136	2.414	0.009
	ITINF	0.363	0.055	0.362	6.656	0.000
	INNO	0.249	0.049	0.267	5.038	0.000

Based on the standardized regression coefficients, the standardized regression equation is determined as follows:

$$\text{PERF} = 0.362 \text{ ITINF} + 0.282 \text{ DATA} + 0.267 \text{ INNO} + 0.136 \text{ DSERV} + 0.117 \text{ PROC}$$

Thus, the influence level of factors on the dependent variable is arranged in descending order as follows: ITINF → DATA → INNO → DSERV → PROC.

Therefore, the research results confirm the important role of information technology infrastructure (ITINF) and data (DATA) in impacting the dependent variable, while also showing that innovation capability (INNO), process digitalization (PROC), and digital services (DSERV) contribute significantly to the research model.

## 6. Conclusion

The study tested a regression model to evaluate the impact level of digital transformation factors (DATA, PROC, DSERV, ITINF, and INNO) on the dependent variable (Business performance of 5-star hotels in Ho Chi Minh City). Analysis results show that all these factors have positive and statistically significant influences at the 5% level, thereby confirming that the proposed research hypotheses are consistent with the empirical data.

Among them, information technology infrastructure (ITINF) is the factor with the strongest impact on the dependent variable, followed by data (DATA) and innovation capability (INNO). This demonstrates the central role of technology platforms and data exploitation capabilities in enhancing the effectiveness of the research outcome variable. Besides, process (PROC) and digital services (DSERV), although having lower impact levels, still play important and significant roles in the model.

Overall, the research results contribute to strengthening the theoretical foundation regarding the relationship between technology factors, processes, innovation, and operational

performance. Simultaneously, the study provides important practical implications for organizations in prioritizing investment in information technology infrastructure, enhancing data exploitation, promoting innovation, and perfecting processes to improve operational performance in the current context of digital transformation.

## **7. Limitations and Future Research Directions**

### **7.1. Limitations of the Study**

Although the study achieved its set objectives and tested the theoretical model with statistically significant results, the research still has certain limitations.

First, the study was conducted within the scope of a survey sample in one region and at one specific point in time, thus the generalizability of the results is limited. Specific characteristics of organizational context, industry, or socio-economic conditions may affect the impact level of variables in the model.

Second, the research model only considered five factors including DATA, PROC, DSERV, ITINF, and INNO. In reality, the dependent variable may be influenced by many other factors such as organizational culture, leadership capability, digital transformation readiness level, or external environmental factors. Not including these variables in the model may reduce the comprehensive explanatory power of the study.

Third, data were collected through survey methods, which may be subject to subjective perception bias or social desirability bias.

### **7.2. Future Research Directions**

Based on the above limitations, future studies may expand in several directions:

First, expand the research scope with larger and more diverse sample sizes regarding fields, regions, or organizational types to enhance the generalizability of results.

Second, add mediating or moderating variables to the model (e.g., organizational culture, leadership capability, digital maturity level) to analyze more deeply the impact mechanisms between factors.

Third, apply advanced analysis methods such as SEM or multi-group analysis to test differences between research subject groups.

Fourth, combine qualitative methods (in-depth interviews, group discussions) with quantitative methods to enhance comprehensiveness and depth in explaining research results.

These research directions will contribute to perfecting the theoretical model, enhancing academic value, and increasing practical significance of studies in this field in the future.

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