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RESEARCH ARTICLE



The impact of information technology adoption on hotel performance: Evidence from a developing country

Imane Ezzaouia ^a and Jacques Bulchand-Gidumal ^b

^aEconomics, Business and Tourism School, University of Las Palmas de Gran Canaria, Campus Universitario de Tafira, Las Palmas, Spain; ^bTIDES Institute of Tourism and Sustainable Development, University of Las Palmas de Gran Canaria, Campus Universitario de Tafira, Las Palmas, Spain

ABSTRACT

Hotel managers seek continual enhancement of their organizational performance by adopting innovative strategies and tools. Armed with the knowledge that information technology (IT) has revolutionized the hotel industry, this study investigates the impact of IT adoption on hotel performance (HP) in Morocco, a developing country. The proposed research model includes two constructs, namely, employee performance and financial performance. A quantitative approach is used, and the sample includes 100 general managers from three-, four-, and five-star hotels. The hypotheses were tested using a partial least squares (PLS) method, and the findings indicate that the major impact of IT adoption on HP can be seen in employee performance rather than in financial performance. The results also reveal a significant relationship between employee performance and financial performance in hotels, and the implications of these findings for researchers and hoteliers are discussed.

KEYWORDS

Information technology; adoption; hotel industry; developing countries; employee performance; financial performance

Introduction

Today, companies must identify and explore how to access and capitalize on the key resources that could enhance their business performance, allowing them to remain competitive in the field in which they operate. Accordingly, information technology (IT) has dramatically transformed the hotel industry in recent years (Buhalis & Leung, 2018).

The increasing use of IT in business processes has led to lower costs (Ahmad and Scott, 2019) and higher revenues (De Pelsmacker et al., 2018; Kim & Chae, 2018), thereby improving the financial performance of hotels that have adopted useful IT tools (Buhalis & Leung, 2018; Jeong et al., 2016). Furthermore, the use of IT in the workplace improves communication among employees (Aboelmaged, 2018), enhances the quality of service provided (Jeong et al., 2016), and helps managers make appropriate decisions based on information from the proper source at the proper time (Buhalis & Leung, 2018).

CONTACT Imane Ezzaouia  imane.ezzaouia@gmail.com  Economics, Business and Tourism School, University of Las Palmas de Gran Canaria, Spain

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Hoteliers must confirm the important benefits to be gained from investing in IT tools. Thus, more research is needed, especially studies dealing with a variety of contexts, as the generalization of factors and their circumstances differ according to the context in which they are applied, from developed to developing countries (DCs) (Ezzaouia & Bulchand-Gidumal, 2020).

The number of studies related to the adoption of IT in the tourism and hospitality industry increased rapidly in the second half of the 2000s, specifically in countries such as the United States, China, the United Kingdom, and Australia (Yuan et al., 2019). Additionally, it is quite common to encounter studies that investigate the impact on organizational performance of IT use in hotels in developed countries. However, few studies have been conducted in DCs.

This study aims to investigate the impact of IT adoption on HP in Morocco, which places the study within the context of a DC. It focuses on three-, four-, and five- star hotels and luxury riads (i.e., traditional Moroccan houses with two floors and a courtyard with a fountain in the middle, surrounded by trees) in Agadir and Marrakech.

This paper addresses gaps in the literature by investigating the following questions: How does the actual level of IT adoption impact HP, which is measured through employee performance and financial performance? Which type of IT drives the desired HP? Are the results similar or different in developed countries and DCs? To the authors' best knowledge, this research is one of the first studies in Morocco analyzing the current level of IT adoption in the hotel industry and its impact on HP.

By analyzing financial performance and employee performance, this study provides insights for hotel owners and managers regarding the numerous benefits realized through the adoption of IT tools in their business.

Literature review

This section begins by discussing recent studies related to IT adoption in the hotel industry and follows up with detailed explanations of how IT adoption impacts HP. Additionally, a comprehensive model is proposed and tested using a developing country as the case study.

IT in the hotel industry

In the hotel industry, IT is considered a strategic resource and a key factor in providing business value, enhancing competitiveness, and improving organizational performance (Buhalis & Leung, 2018). However, a hotel general manager's willingness to adopt IT and the level of use of such technologies may differ due to several factors. In this sense, Ezzaouia and Bulchand-Gidumal (2020) revealed that four types of factors affect the adoption of IT

in the hotel industry: organizational characteristics, individual characteristics, perceived benefits, and external factors. Their results indicate that external factors (i.e., competitive pressure, customer pressure, supplier pressure, and government support) have the strongest impacts on the adoption of IT, followed by the individual characteristics and the benefits that hotel managers perceive they will receive from IT adoption. Organizational characteristics were found to have no significant impact.

Accordingly, Leung (2019) demonstrates that attitudes toward the adoption of new technologies in the hotel industry differ among hotel stakeholders. She states that hotel owners expect the adoption of new technologies will enhance their hotel's reputation and brand image, which, in turn, leads to financial performance. Conversely, hotel managers perceive that the use of new technologies could improve their operating performance, reduce workload, save manpower and costs, and increase revenue.

IT encompasses a variety of tools that provide support for the collection, transformation, storage, and sharing of information. More specifically, the hotel industry has adopted, among others, computer reservation systems, global distribution systems, customer relationship management (CRM) systems, knowledge management systems, mobile applications, websites, and social media platforms (e.g., Facebook, Twitter, YouTube, and TripAdvisor) (Law et al., 2014).

Consequently, to evaluate the level of IT adoption, scholars have used a variety of methodologies. For instance, Sirirak et al. (2011) include three elements for measuring the level of hotels' IT adoption, namely, the availability of IT components, the integration of IT components, and the intensity of IT use. Chevers (2015) adapts a model by Sirirak et al. (2011) to propose four levels of IT adoption from the hotel's operational domain: the intensity of IT component use in the room division department, the intensity of IT component use in the food and beverage department, the intensity of general IT component use, and the intensity of in-room IT component use. Furthermore, Ramayah et al. (2016) divide the level of the IT tools into two groups, basic and advanced, beginning from level 0 (e.g., e-mail) to level 4 (e.g., business transformation).

In light of the above, four levels of use are tested to verify the extent of IT adoption in hotels, namely: front-office IT use (A1), in-room IT use (A2), food and beverage IT use (A3), and back-office IT use (A4).

IT adoption and performance in the hotel industry in developed countries versus DCs

Evidence suggests that the adoption of IT in the hotel industry differs from developed countries to DCs (Ezzaouia & Bulchand-Gidumal, 2020). This could be related to several factors, such as social and economic trends, laws, and rules

that apply in each country (Perdomo-Pérez & Suárez-Ortega, 2017). It may also be related to the differences in culture between developed countries and DCs (Sunny et al., 2019). Therefore, it is worth studying whether there are also differences in terms of the benefits gained. Accordingly, a study conducted by Mohammed et al. (2014) indicates that the use of an IT tool such as a CRM system improved a hotel's financial performance, internal processes, and staff education and growth. Ahmad and Scott (2019) suggest that the use of various IT tools, such as property management systems and self-check-in/out kiosks, reduces labor costs and increases productivity and efficiency in Malaysian hotels. Furthermore, Masa'deh et al. (2019) state that there are positive impacts of technological and cultural knowledge management infrastructures on job satisfaction in Jordan.

Moreover, Madhukar and Sharma (2019) reveal that IT plays a significant role in the profitability of the Indian tourism and travel industry. In the hotel industry in particular, this includes maintaining competitive pricing, promoting products and services, improving customers' service quality, and reaching customers directly without distance and time constraints.

However, Mihalič and Buhalis (2013) report that IT does not directly increase the profitability of hotels in Slovenia. They suggest that IT adoption has an indirect positive effect on a hotel's financial performance that occurs through other determinants, such as differentiation, quality, or image.

Performance can be measured through several dimensions, but scholars have adopted the most relevant constructs to measure it. For instance, Cohen and Olsen (2013) use profitability, sales growth, and revenue per available room, while Xie et al. (2016) also include revenue per available room as an HP indicator. Kim and Chae (2018) studied the correlation between the adoption of IT tools such as Twitter and room sales performance in hotels in the United States.

Furthermore, other researchers focused mainly on employee performance as the most crucial construct to assess HP. For instance, a study conducted by Rusdi et al. (2017) reveals that IT adoption has an insignificant relationship with employee performance in Malaysian firms. Conversely, Melián-González and Bulchand-Gidumal (2017) indicate that IT use greatly impacts the performance of front-office employees in hotels. This is supported by the work of Shin et al. (2019), who find that front desk employees are more effective in completing their tasks when they use innovative technology. Their results particularly revealed that IT use positively influences human resource management practices such as hiring and training.

Following the studies that have been mentioned, two constructs are used to measure HP: employee performance and financial performance.

Development of hypotheses

Employee performance

Many scholars believe that IT adoption has a strong positive effect on employee performance. For instance, Yueh et al. (2016) suggest that using IT in the workplace positively influences an employee's perceived improvement in their work performance.

From the perspective of managers, IT can enhance employee performance, work knowledge, and communication at a lower cost (Lu et al., 2016) while increasing the quality of the services delivered (Buhalis & Leung, 2018). This is corroborated by the study of Shin et al. (2019), which revealed that hotel front desk technology affects operational processes, output, experiences, and systems. Therefore, the following hypothesis is proposed:

Hypothesis 1. There is a positive relationship between the level of IT adoption and employee performance in hotels.

To test Hypothesis 1, two variables are used to measure employee performance according to the literature review: improvement in employee productivity and improvement in service quality. These variables are described in the following paragraphs.

Improvement in employee productivity. Many studies suggest that IT adoption has a positive effect on employee productivity. For instance, Stieglitz and Brockmann (2012) state that IT tools help employees collect the information necessary to do their job and ensure that workflows are clear, flexible, and effective using unified communication channels. Chang et al. (2013) reveal that more than 60% of surveyed managers assume that adopting IT tools boosts employee productivity, responsiveness, and job satisfaction.

Jeong et al. (2016) indicate that hotel employees feel confident using IT and perceive IT as a relevant tool to enhance their job performance, which leads to increased job satisfaction and willingness to remain with the current organization longer. Aboelmaged (2018) suggests that using IT tools to communicate and spread relevant internal and external information has a positive effect on employee productivity. Additionally, Leung (2019) states that, from the perspective of hotel managers, novel IT systems streamline daily operation procedures and make internal departments interconnected and interoperable, thereby increasing employee productivity.

Improvement in service quality. With the rapid evolution of IT, hotels have digitized many internal operations to achieve better service quality and meet their guests' needs. Employing technologies such as enterprise resource planning, property management systems, and CRM systems, among others, improves the service quality provided by employees (Chevers, 2015) and

reduces human errors (Leung, 2019). For example, front desk employees can be more effective in their tasks and deliver high service quality when they use front desk innovative technology (Shin et al., 2019).

Moreover, the adoption of CRM systems in the hotel industry increases efficiency and improves guests' service quality, since it helps hotel employees identify and build a deep understanding of customers' needs and expectations. Consequently, they are able to customize products and services, ensuring higher service quality and, ultimately, maintaining customers' loyalty (Mohammed & Rashid, 2012; Rahimi & Kozak, 2016).

Financial performance

Financial performance is the most frequent indicator used to measure firm performance. Additionally, the literature reveals that adoption of IT has a significant effect on a firm's financial performance by enhancing revenues and decreasing costs (Melián-González & Bulchand-Gidumal, 2016).

In the hotel industry, studies suggest that IT investments play a fundamental role in financial performance (DeFranco et al., 2017) and can lead to long-term profitability (Diavastis et al., 2016). Mohammed et al. (2014) state that in the Malaysian hotel industry, CRM technology is combined with the financial dimension of the organization's performance. This is supported by Patiar and Wang (2016), who demonstrate that using IT in hotels leads to improved profitability and financial performance. Additionally, Piccoli et al. (2017) confirm that IT-enabled service personalization improves a hotel's financial performance through revenue transformation from costly intermediated to direct distribution channels. In that context, the following hypothesis is suggested.

Hypothesis 2. There is a positive relationship between the adoption of IT and financial performance in hotels.

Hypothesis 2 is tested by using the following three variables to measure financial performance: improvement in sales revenue, reduction in operating costs, and improvement in overall profitability. These variables are explained in the following paragraphs.

Improvement in sales revenue. Many researchers suggest that IT adoption plays a major role in increasing market share in the tourism industry (Aramendia-Muneta & Ollo López, 2013). More specifically, social media channels greatly impact the customer-oriented processes that, in turn, impact an organization's sales performance (Rodriguez et al., 2014; Wong, 2012). Kwok and Yu (2013) state that sales revenue can be increased by using IT tools such as Facebook. Aziz et al. (2011) similarly argue that implementing IT in the hotel industry increases revenues. However, Hua et al. (2015) note that

IT investments have a significant positive impact on room revenue for mid-scale and upscale hotels but not luxury, upper upscale, and upper midscale hotels.

Reduction in operating costs. In the hotel industry, many researchers have revealed that IT adoption reduces operating costs overall and provides greater productivity by improving the efficiency and effectiveness of hotel processes. This, then, reduces transactional and operational costs (Lu et al., 2016).

Melián-González and Bulchand-Gidumal (2016) support this finding, highlighting how IT adoption increases HP by reducing two types of costs: personnel and non-personnel activities. The former consists of reducing staff costs and increasing profitability by using, for example, an online check-in system. The latter refers to raw materials and energy, such as kitchen control and energy management systems.

Additionally, Leung (2019) reveals that most hoteliers expect IT systems to increase hotel revenue and reduce operating costs and manpower (i.e., daily tasks could be done partly by automated processes).

Improvement in overall profitability. Several empirical studies have examined the benefits of IT for financial performance, specifically in terms of profitability (Leung, 2019). For instance, Elhamma and Yi Fei (2013) state that the use of IT tools instead of traditional systems leads to increased profitability and better organizational performance. Krumwiede and Charles (2014) argue that firms enhance their profitability when they implement high-quality IT. Patiar and Wang (2016) further suggest that hotels can use sophisticated IT to gain a cost advantage over their competitors and increase efficiency in operational decisions, which, in turn, lead to improved profitability and financial performance (Patiar & Wang, 2016).

Employee performance and financial performance

Several studies have identified the impact of employee performance and employee satisfaction on a hotel's financial performance (Baker et al., 2014; Decramer et al., 2013). For instance, DiPietro et al. (2014) reveal that employee satisfaction is vital in enhancing financial performance. Additionally, Amin, Mohamed Aldakhil, Wu, Rezaei, and Cobanoglu Amin et al., (2017) demonstrate a significant relationship between employee satisfaction and HP.

Furthermore, it has been demonstrated that the use of IT tools in daily tasks improves employees' performance and increases their job satisfaction (Jeong et al., 2016), which is crucial to achieve the expected results from employees and improve hotel financial performance (Latif et al., 2013).

As the hotel industry is a human-oriented sector, it is of great importance for hotel managers to ensure the satisfaction of their employees: Happy employees will deliver high-quality service and produce happy guests, thereby increasing hotel revenue and profitability as a result (Al-Refai, 2015; Arsić et al., 2012).

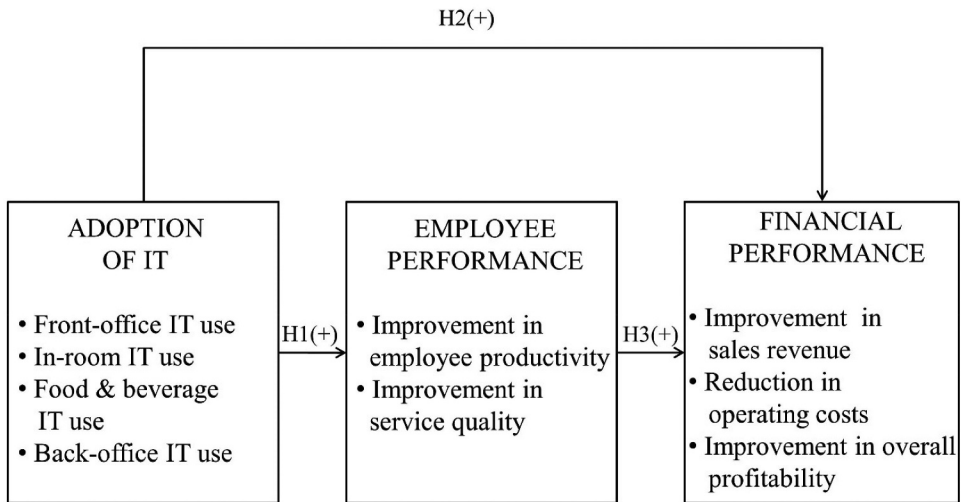


Figure 1. The impact of information technology adoption on hotel performance.

There is a common assumption that satisfied employees work harder and are more likely to deliver continuous improvement and higher service quality, both of which lead to improved sales and financial performance (Al-Refaie, 2015; Sanchez & Blanco, 2014). However, some scholars, such as Chi and Gursoy (2009), reveal that employee satisfaction and productivity have an insignificant direct relationship with financial performance. In light of the above, the following hypothesis is proposed:

Hypothesis 3. There is a positive relationship between employee performance and financial performance in hotels.

Hypothesized model

Based on the above, Figure 1 illustrates the hypothesized model of this study where it can be seen that the adoption of IT has a positive effect on HP as measured by employee performance and financial performance. Each of the three elements has a set of indicators that are measured separately on the questionnaire mentioned in the section below.

Methodology

Research context

Morocco, one of the most attractive destinations in Africa, is located on the northwest edge of the continent and boasts a coastline on both the Mediterranean Sea and the Atlantic Ocean. Morocco is known by its diversity of natural assets, culture, religions, and languages, which makes the country one of the preferred destinations by international visitors.

According to the World Bank's human development index, which measures life expectancy, educational attainment, and adjusted real income (in dollars per person) to classify economies, Morocco is considered a DC.

Conversely, the level of use of IT in Morocco is increasing in various economic sectors, such as tourism. Major national programs, namely, Maroc Numeric 2013 and Maroc Digital 2020, aim to make IT a source of productivity and a pillar of the economy, as well as position Morocco as a regional technology hub.

Data collection

This study explored the impact of IT adoption on HP in a case study of a DC. For this purpose, a self-administered research questionnaire was developed as a data-collection tool at hotels in Agadir and Marrakech, the two most-visited destinations in Morocco, which are likely to handle a large volume of tourist information that requires the use of IT. The questionnaire was hand-delivered and later hand-collected, because face-to-face communication has been demonstrated to enhance the response rate. Since access to all hotel employees was problematic, questionnaires were addressed only to the hotels' general managers. Additionally, constructs were measured from the perceptions of managers and not through the use of current indicators, such as the actual occupancy rate or hotel revenue. This decision was made after a pretest was performed at 15 hotels, which found that hotel managers were unwilling to disclose that type of information.

Questionnaires were written in French, as it is the second-most-common language in Morocco, and were delivered by research assistants as well as by one of the authors of this study. Data were collected from December 2017 to February 2018. A total of 300 questionnaires were distributed to managers of all three-, four-, and five-star hotels in Agadir (65 hotels) and Marrakech (160 hotels); three luxury riads in Agadir (the only riads in that city); and 72 luxury riads in Marrakech (out of a total of 883 riads). One- and two-star hotels and basic riads were not included in the survey because earlier interviews with managers of these tourist facilities found very low use of IT. Therefore, it would be difficult to measure the relationship between IT adoption and HP in these cases.

A total of 113 responses were collected, among which 13 were discarded for several reasons (responses missing in the questionnaire, respondents were the wrong persons, etc.). Thus, the final sample size contained 100 valid responses for a response rate of 33.3%.

Description of the sample

Most responses were from four-star hotels (45%). Among the respondents, 69% are male and 31% were female; most are between 31 and 40 years old (31%); and 29% have between four and five years of work experience in the hotel. Most respondents have a master's degree (56%) and belong to front-office department (46%). More than 50% of the hotels have between 100 and 199 rooms, and 25% of the hotels have between 100 and 150 employees.

The level of IT adoption in the sample is high, with only 3% of hotels not using basic IT and more than 82% of hotels using advanced IT systems (Table 1.)

Data analysis

The hypotheses were tested using a partial least squares (PLS) method with PLS-graph software version 3.2.8 (see, Figure 2). The main reason for using PLS is its value as an exploratory form of analysis and as a confirmatory multivariate technique that includes measurement errors and the relationships among latent variables (LVs) and observed ones. The PLS approach enables the simultaneous testing of hypotheses, allowing measures with both single and multiple items and the use of reflective and formative indicators. In the case of this model, reflective measurement scales were used (Hair et al., 2017a). The common rule to determine the minimum sample size of PLS-structural equation modeling models is provided by Hair et al. (2017a) and states that the sample size should be at least 10 times the largest number of indicators of a formative construct or 10 times the largest number of paths directed at a construct of the model. The sample size of 100 exceeds this requirement.

All constructs and items derived from previous literature were tailored to the aim of this study. Self-report questionnaires were used to measure all items. According to many researchers, this method is appropriate for collecting personal data, asking respondents about future plans, and scaling some psychological status (Brannick et al., 2010; Podsakoff et al., 2003, 2012; Podsakoff & Organ, 1986). As previously explained, a pretest was conducted in which different alternatives were used to obtain performance measures from a variety of sources and to collect measurably objective data. However, due to the limited availability of public information and the unwillingness of managers to disclose this type of information, it was not possible to achieve the objective of using a number of different sources.

All items are based on a 7-point Likert-scale ranging from strongly disagree (1) to strongly agree (7) (see, Table 2). A total of nine questions were used to test the hypotheses. The questionnaire also included two additional parts that

Table 1. Characteristics of the sample.

Type of hotel	Percentage in the final sample	Response rate per type
Riad	7%	37.84%
3-star	19%	34.09%
4-star	45%	51.25%
5-star	29%	72%
Gender of the respondent		
Male	69%	
Female	31%	
Age of the respondent		
From 21 to 30 years	24%	
From 31 to 40 years	31%	
From 41 to 50 years	27%	
From 51 to 60 years	11%	
Above 60 years	7%	
Education of the respondent		
Secondary education level	2%	
Higher education	38%	
Master's degree	56%	
Ph.D.	4%	
Department of the respondent		
Front-office	46%	
Room division	19%	
Food and beverage	5%	
Back-office	30%	
Number of hotel rooms		
30 rooms or less	9%	
31–99	16%	
100–199	51%	
200–299	13%	
300 rooms or above	11%	
Number of employees		
25–50	12%	
50–100	17%	
100–150	25%	
150–200	15%	
200–250	12%	
250–300	8%	
300 employees or above	11%	
Level of IT adoption (i.e., basic 1–2; advanced 3–5)		
Level 1-E-Mail	100%	
Level 1-Website	97%	
Level 2-Booking engines	100%	
Level 3-PMS (Property Management Systems)	86%	
Level 3-CRM (Customer Relationship Management)	87%	
Level 3-SMS (notification, promotion, etc.)	91%	
Level 3-Reservation systems (GDS, CRS)	100%	
Level 4-Facebook	92%	
Level 4-Twitter	73%	
Level 4-Youtube	78%	
Level 4-TripAdvisor	90%	
Level 4-LinkedIn	71%	
Level 5-Mobile applications	57%	
Work experience of the respondent in this hotel		
From 1 to 2 years	11%	
From 2 to 3 years	22%	
From 3 to 4 years	25%	
From 4 to 5 years	29%	
More than 5 years	13%	

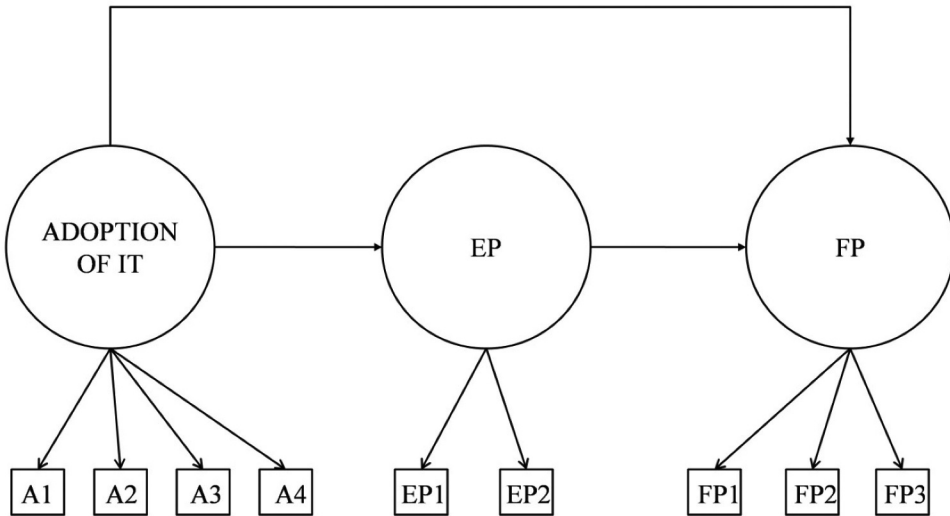


Figure 2. PLS-SEM model.

seek general information about the hotels or the riads (e.g., name, category, number of employees, the level of IT used) and general information about the respondent (e.g., gender, age, years of experience, education level).

The model of this study encompasses two endogenous LVs: employee performance, measured by improvement in employee productivity and improvement in service quality; and financial performance, measured by improvement in sales revenue, reduction in operating costs, and improvement in overall profitability); and one exogenous LV, the adoption of IT (see, Figure 2).

Results

Assessment of the measurement model

To examine collinearity issues of the inner model, the variance inflation factor was verified. The results indicate that only the variance inflation factor value of the variable A4 (i.e., the level of back-office IT use) exceeds the acceptable threshold of 5 (Hair Jr. et al., 2017c). Thus, A4 was removed from the model.

To assess the measurement model, the convergent validity was first evaluated by examining indicator loadings, composite reliability, and average variance extracted (AVE) (Hair Jr. et al., 2017c). By checking Table 3, it can be stated that all indicators have loadings that exceed the preferred level of 0.7 for an exploratory research as well as values of composite reliability that are larger than 0.6. Therefore, high levels of internal consistency reliability have been demonstrated among all of the reflective LVs.

Table 2. Operationalization of variables.

Item	Dimension	Measurement	References
Employee performance	Improvement in employee productivity	EP1- Our hotel has a good employee performance.	Aboelimged (2018); Chang et al. (2013); Jeong et al. (2016); Stieglitz and Brockmann (2012)
	Improvement in service quality	EP2- Our hotel has a good service quality.	Chevers (2015); Leung (2019); Mohammed and Rashid (2012); Rahimi and Kozak (2016); Shin et al. (2019)
	Improvement in sales revenue	FP1- Our hotel has high sales revenue.	Aramendia-Muneta and Ollo López (2013); Aziz et al. (2011); Wong (2012); Hua et al. (2015); Kwok and Yu (2013); Melián-González and Bulchand-Gidumal (2016); Rodriguez et al. (2014)
Financial performance	Reduction in operating costs	FP2- Our hotel has low operating costs.	Melián-González and Bulchand-Gidumal (2016); Leung (2019); Lu et al. (2016)
	Improvement in overall profitability	FP3- Our hotel has a high overall profitability.	Elhamma and Yi Fei (2013); Leung (2019); Krumwiede and Charles (2014); Patiar and Wang (2016)
	Adoption of information technology	A1- Our hotel has a high level of front-office IT usage. A2- Our hotel has a high level of in-room IT usage. A3- Our hotel has a high level of food and beverage (F&B) IT usage. A4- Our hotel has a high level of back-office IT usage (dropped).	Chevers (2015); Ramayah et al. (2016); Sirirak et al. (2011)

Table 3. Results summary for reflective outer models.

Latent Variable	Indicators	Loadings	Cronbach's Alpha	Composite reliability	AVE
Employee performance (EP)	EP 1	0.918	0.720	0.875	0.778
	EP 2	0.844			
Financial performance (FP)	FP1	0.927	0.932	0.956	0.880
	FP2	0.941			
	FP3	0.945			
ADOPTION OF IT	A1	0.921	0.919	0.949	0.861
	A2	0.951			
	A3	0.911			

Table 4. Fornell-Larcker criterion analysis for checking discriminant validity.

	1	2	3
1.Employee performance	0.882		
2.Financial performance	0.699	0.938	
3.Adoption of IT	0.757	0.796	0.928

Furthermore, all of the AVE values are greater than the acceptable threshold of 0.5 (Bagozzi & Yi, 1988), so the convergent validity is confirmed. Additionally, Table 3 illustrates that all dimensions had Cronbach's alpha values above 0.7 (Hair et al., 2017a), revealing that all dimensions in this model exhibited internal consistency.

The discriminant was tested validity by assessing the correlation between measures of overlapping constructs. In the case of the current, the square root of AVE of each LV (see, Table 4) is larger than the correlation values encompassed in the row and column of such variable. Therefore, the discriminant validity is well-established.

Assessment of the structural model and of hypotheses

The bootstrap result approximates the normality of data. Thus, the structural path significance in bootstrapping was checked. A large number of subsamples (5,000) were taken with a two-tailed *t*-test and a significance level of 5%. In the case of this study, all of the *t*-statistics are larger than 1.96 (see, Table 5). Therefore, it can be stated that all path coefficients in the inner model are statistically significant. This confirms the prior findings of this study.

The Stone-Geisser's Q2 values (cross-validated redundancy measures) can be used to evaluate the research model's ability to predict (i.e., Q = 0.02, 0.15 and 0.35 mean that an exogenous construct has a small, medium, and large predictive relevance for a LV, respectively; Hair Jr. et al., 2017c). In the current study, $Q^2 = 0.565$ for financial performance and 0.428 for employee

Table 5. Results of hypotheses testing.

Hypothesis	Relationships	Path Coeff.	Sig.	T Statistics	Confidence Intervals	Confidence Intervals Bias	Supported	Variable Correlation	R ²	Q ²	f ²
Employee performance											
H1	ADOPTION OF IT → EP	0.757	***	16.410	[0.684; 0.827]	[0.666; 0.817]	Yes/Yes	0.757	0.572	0.428	1.339
Financial performance											
H2	ADOPTION OF IT → FP	0.625	***	6.130	[0.440; 0.800]	[0.447; 0.805]	Yes/Yes	0.796	0.656	0.565	0.485
H3	EP → FP	0.226	*	1.962	[0.039; 0.430]	[0.022; 0.415]	Yes/Yes	0.699	0.498	0.158	0.064

Note: N = 5000 subsamples; * p < .01; ** p < .005; *** p < .01.
 Confidence Intervals [5%-95%]
 Effect f²: < 0.15 small; < 0.35 medium; ≥ 0.35 large

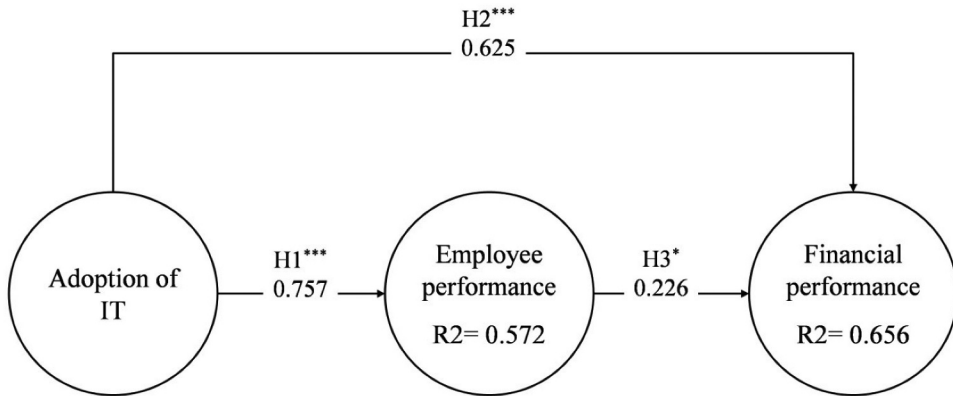


Figure 3. Estimated causal relationships in the structural model. Note: *, $p < .1$; **, $p < .05$; ***, $p < .01$.

performance (see, Table 5). Thus, it could be stated that the measurement model is appropriate, and the structural model has a large predictive relevance for the two constructs.

In Figure 3, the coefficient of determination, R^2 , equals 0.572 for employee performance endogenous LV. Therefore, the adoption of IT explains 57.2% of the variance in employee performance. Additionally, the adoption of IT explains 65.6% of the variance in financial performance.

Based on Figure 3 and Table 5, hypothesis H1, which theorized a positive relationship between adoption of IT and employee performance, was verified (the standardized path coefficient $\beta = 0.757$, at the level of $p < .01$). This is also the case for hypothesis H2, which theorized a positive relationship between the adoption of IT and financial performance ($\beta = 0.625$, $p < .01$). Moreover, H3, which theorized a positive relationship between employee performance and financial performance, was verified ($\beta = 0.226$, $p < .1$).

Therefore, as proposed in hypothesis H1, the adoption of IT has a positive effect on HP through employee performance (improvement in employee performance and improvement in service quality). Thus, H1 is supported.

Additionally, as proposed in hypothesis H2, the adoption of IT has a significant effect on HP through financial performance (improvement in sales revenue, reduction in operating costs, and improvement in overall profitability). Thus, hypothesis H2 is confirmed.

Moreover, as suggested in hypothesis H3, there is a positive relationship between employee performance and financial performance in hotels. Thus, H3 is supported.

Conclusions and implications

The aim of this study was to determine the impact of IT adoption on HP, specifically in the case of a DC, Morocco. To help achieve this aim, the proposed research model of this study uses employee performance and financial performance to measure HP, using data collected from a sample of 100 hotel general managers in Agadir and Marrakech.

Employee performance is based on improvement in employee performance and improvement in service quality, and financial performance is assessed through improvement in sales revenue, reduction in operating costs, and improvement in overall profitability.

The main conclusion of this study is that the adoption of IT tools has impact on HP when measured by employee performance. This result is consistent with the findings of Aboelmaged (2018), whose study suggests that using IT to share internal and external information has a significant positive effect on employee performance. The result also aligns with the works of Chevers (2015) and Shin et al. (2019), which indicate that the implementation of IT leads to an improvement in the quality of service provided by employees.

Another important conclusion is that IT adoption has a significant relationship with financial performance. This result corroborates the findings of Kwok and Yu (2013) and Hua et al. (2015), which suggest that implementation of IT tools in the hotel industry has increased sales revenue, and with the study by Diavastis et al. (2016), which demonstrates that the use of IT tools has a positive effect on a hotel's financial performance by improving the long-term profitability of the hotel.

Moreover, the study reveals a significant relationship between employee performance and financial performance. This result is consistent with the work of Al-Refai (2015) and DiPietro et al. (2014), revealing that employee productivity and satisfaction lead to higher financial performance. However, the results of this research contradict the study of Chi and Gursoy (2009), which indicates an insignificant direct relationship between employee satisfaction, productivity, and financial performance.

In terms of theoretical implications, this study helps to provide a better understanding of the impact of IT adoption on HP, specifically in the case of DCs, as there is still a lack of such research. Additionally, many cases in the literature had respondents who were general hotel employees. The current study is based only on the perspective of hotel managers, who play central roles in any hotel's operation.

To the best of the authors' knowledge, this study can be considered to be unique research exploring the actual level of IT adoption and its impact on HP in Morocco. However, a similar study could be conducted in other DCs to ascertain whether there are differences among countries.

Regarding implications for practitioners, this study provides insights for hotel managers about the numerous advantages related to the adoption of IT tools in the workplace. These advantages include improving communication and interaction with employees, assisting daily operations, and enhancing business performance (Masa'deh et al., 2019).

Hoteliers may need to confirm the real benefits they will enjoy following the adoption of IT. Thus, this study could draw the attention of hotel managers to certain tools that could improve their business performance (DeFranco et al., 2017), especially given the large amount of data handled by hotel employees. This study provides insights into how hoteliers could use, manage, and exchange data in an effective way to enhance their overall business performance.

This study's results revealed that the adoption of IT leads to improved financial performance by reducing costs and increasing sales revenue and profitability. These findings may provide encouragement and guidance for hotel managers or policymakers in Morocco or in other DCs who intend to adopt novel IT systems to improve their financial performance in the future. Additionally, these results may provide the necessary motivation for a government to introduce national programs that promote the adoption of novel IT tools in the hotel industry.

Furthermore, these results reveal a positive relationship between employee performance and hotel financial performance, thereby strengthening hotel managers' understanding of the key role played by employees in making an organization successful. Consequently, a business' attempt to improve the quality of its employees' lives by adopting competitive IT strategies could increase productivity, enhance employee satisfaction, ensure continuous training programs, and support the provision of additional workplace benefits. In summary, all of these factors combine to enhance HP. In terms of social implications, these findings could enhance the positive Moroccan attitude regarding the importance of adopting novel IT tools in the tourism and hospitality industry.

Finally, the limitations of this study include a small sample size, limited dimensions for HP measurement, and a focus on a single location and context – the hotel industry in Morocco. Additionally, HP was assessed from the perceptions of managers and not by objective indicators such as the actual occupancy rate, detailed revenue reports among others. Moreover, self-report measures from only one type of source could lead to common method bias.

Future studies should analyze larger samples, and it would also be thought-provoking to measure HP in terms of customer satisfaction, for example, through TripAdvisor. Additionally, it would be interesting to make a comparative study between Morocco and other DCs to provide an overview of the tourism industry in these countries as well as emphasize similarities and differences.

Furthermore, the use of technology has dramatically increased worldwide in the past two years, largely as a result of rapid technological changes and COVID-19 restrictions. Therefore, future research could conduct similar studies in the current or post-pandemic contexts to determine whether there are differences arising from each situation. Finally, the measurement model of the current study could be used to investigate IT adoption in other disciplines and its impact on various categories of enterprises.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Imane Ezzaouia  <http://orcid.org/0000-0002-3814-6684>

Jacques Bulchand-Gidumal  <http://orcid.org/0000-0001-8522-2013>

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