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Paving the way for CRM success: The mediating role of knowledge management and organizational commitment

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ABSTRACT

Customer relationship management (CRM) has become one of the most influential technologies in the world, and companies are increasingly implementing it to create value. However, despite significant investment in CRM technology infrastructure, empirical research offers inconsistent support for its positive impact on performance. This study develops and tests a research model analyzing the process through which CRM technology infrastructure translates into organizational performance, drawing on the resource-based view (RBV) and the knowledge-based view (KBV) of the firm. Based on an international sample of 125 hotels, the results suggest that organizational commitment and knowledge management fully mediate this process.

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1. Introduction

Customer relationship management has become a top priority for companies and since the late 1990s, there has been an explosion of interest in CRM in both the literature and the business worlds [7,51]. In the current competitive environment, characterized by financial challenges and increasing competitiveness among firms, success depends on a firm's ability to satisfy its customers. CRM has gained momentum, and companies all over the world are implementing it to improve customer services, satisfaction, and retention [36]. The consultancy firm Gartner has noted that more than \$20.4 billion was spent on CRM software in 2013 and in coming years, this figure is expected to continue to grow [27]. CRM has also been recognized as one of the key topics in Information Systems (IS) research [49] and because it is considered an emerging field of inquiry, it is the subject of a great deal of interest within the research community [60].

CRM is considered a strategic approach to managing customer relationships to create both customer and shareholder value [51]. CRM is useful for companies in that it allows them to detect

changes in customer needs, personalize their service, differentiate themselves from competitors, and create a competitive advantage [16,58]. It involves enhancing and maintaining quality relationships with the market by using customer knowledge and a technological infrastructure to help firms generate customized offerings on an individual basis [45]. It is a combination of people, processes and technology that seeks to understand a company's customers. Technology infrastructure plays a substantial role as a basic enabler of CRM because integrating databases, data mining, and Internet technologies allows the firm to collect and store unprecedented amounts of customer data and build relationships based on interactions [17,80].

This study focuses on the technological component of CRM, i.e., the CRM technology infrastructure. Despite the key role played by CRM technology infrastructures and companies' huge investments in their applications, recent studies report mixed findings regarding CRM's effect on performance, and there is a growing skepticism about the real value of CRM initiatives [58]. Diverse studies have shown disappointing results when implementing CRM [43,60,61]; some even demonstrate that only 30% of the organizations that have introduced CRM technology infrastructure have achieved improvements in their organizational performance [16]. Several authors [58,80] argue that the mechanism through which CRM technology infrastructure enhances performance is not well understood and therefore, managers have little guidance about how to focus their CRM efforts. To date, few

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studies have considered the possibility that other variables might mediate the relationship between CRM technology infrastructure and firm performance and therefore, it seems imperative to investigate this process more thoroughly [16,58].

To shed light on the topic, we develop a model that draws on the resource-based view (RBV) and the knowledge-based view (KBV) to analyze CRM technology infrastructure success. Both theoretical approaches have been widely used in the field of IS and have proven to valuable tools to examine how Information Technologies (IT) relate to organizational performance [75].

The objective of this study is to propose a research model that traces the path from CRM technology infrastructure to CRM success and that will reflect CRM's impact on performance. Accordingly, this research seeks to answer the following research questions: (1) What resources are important to implementing CRM technology infrastructures successfully? (2) How are these resources combined to create value for the firm? Both questions are of practical importance because companies are investing considerable time, money and effort to implement CRM technological infrastructures but all too often, these expenditures are wasted when CRM ultimately fails to deliver the promised benefits [23].

By drawing on the RBV and the KBV, this study offers two relevant contributions. First, it empirically displays the overall mechanism by which CRM technology infrastructure successfully enhances business performance, including the different resources involved in the process and how they interrelate. Second, it highlights the crucial role played by organizational commitment in this process, which is the proven main determinant of CRM success.

The remainder of the paper is structured as follows. Section 2 presents the literature review. In Section 3, the research model and hypotheses are proposed. Section 4 presents the data and the research methodology used in the empirical analysis. Section 5 describes the results obtained. Finally, in Section 6, we discuss the study's results, its implications, its limitations, and possible directions for future research.

2. Literature review

Managing customer relationships effectively and efficiently offers numerous benefits to organizations, and CRM technology infrastructure—when properly implemented—can result in increased competitiveness [17]. By using recent advances in CRM technology infrastructure to build relationships and to learn, a firm can develop links with its customers, resulting in a successful and profitable long-term business strategy [45]. Consequently, when it works, CRM technology infrastructure allows companies to gather customer data swiftly, to identify the most valuable customers over time, and to increase customer loyalty by providing customized products and services [61]. However, although some recent studies have provided evidence of the positive relationship between CRM and performance [16,20,68], many academic and business reports have shown disappointing results, and they highlight the necessity of further investigating the link between CRM technology infrastructure and performance [33,43,61].

The disappointing results of many CRM implementations are well documented in both the academic and the business press [60]. In this vein, it has been reported that for various reasons—including a lack of capable staff, misaligned processes, poorly designed systems and an inability to integrate the CRM technology infrastructure with existing business processes—many CRM technology infrastructures adopted by firms have not fully met customer needs [66].

Consequently, the issue of how the implementation of CRM technology infrastructure can be more effectively and consistently translated into meaningful business benefits is an urgent problem

confronted by both academics and managers in the field of IS. To date, few studies have considered the possibility that important intervening variables may mediate the relationship between CRM technology infrastructure and firm performance; therefore, they fail to shed light on the underlying process of performance improvement [58,80]. Consequently, it seems necessary to further analyze potential influences of unexplored mediating or moderating factors on the mechanism by which CRM technology infrastructure leads to improved business performance [16].

The RBV is a valuable tool for IS researchers to think about how investments in technology infrastructure relate to organizational performance [75]. It has been widely used to assess the strategic value of IT based on differential qualities of resources and capabilities [5,20]. Specifically, in the context of technology infrastructure systems, IS researchers have widely used the RBV to explain business value creation [33,41]. The attributes of RBV make it suitable to be extended to the context of CRM and allow analysis of the fundamental process by which CRM technology infrastructure is transformed in something valuable [33].

When analyzing business value creation through technology from a RBV perspective, most studies have recognized that due to lack of rarity and ease of imitation, technology infrastructures convey no particular strategic benefit [9]. Similarly, in the CRM literature, there has been an overemphasis on the technological aspect [59], which has led to numerous failures in implementing CRM technology infrastructures [51]. Despite organizations' huge investments in CRM technology infrastructures, too often these systems fail to deliver commensurate levels of performance and value because other complementary factors are not valued [23]. The technology infrastructure resource has generally not been found to be a source of sustained competitive advantage, and it has been observed that technological resources must act in conjunction with other complementary resources to provide strategic benefits [75].

In this vein, the RBV literature has widely considered diverse aspects related to human resources and organizational factors as a complementary resource for IT success [57]. In fact, resource-based studies have found that organizational factors—such as employee participation, IT skills, CEO commitment, open communication, organizational flexibility or strategic integration—are determinants of IT performance [9,75]. The organizational issues relevant to CRM technology infrastructures are a critical area that deserves a firm's attention because data and technology systems are relevant, but without appropriate human interaction with these processes and systems, the returns on investments in CRM technology infrastructure are at risk [12]. For a CRM technology infrastructure initiative to be successful, a proper organizational climate is required and therefore, organizational commitment will include top management commitment and support, leadership, employee commitment, and training and reward systems. Therefore, based on the RBV and the extensive CRM literature, we propose that organizational commitment acts as a complementary resource to CRM technology infrastructure resources, mediating its impact on performance.

Additionally, the KBV of the firm holds that the firm's capability to create and utilize knowledge is the most important source of its sustainable competitive advantage [30,47]. This theoretical focus considers that because knowledge-based resources are especially complex and difficult to imitate, they are the major determinants of superior performance [1].

CRM initiatives are based on a great deal of knowledge about, from and for customers, and knowledge management plays a key role in CRM technology infrastructure implementation [28]. Knowledge-management processes help companies to systematically acquire, disseminate and use information from customers to

understand their preferences and needs and to serve them better [53]. Therefore, knowledge management can be considered a determinant of the success of CRM technology infrastructure because firms with better knowledge of their customers are better able to generate better performance [72]. Consequently, we consider knowledge management processes as a complementary resource to CRM technology infrastructure resources, which can also mediate CRM’s impact on performance.

Impact on performance reflects CRM success. Recent studies indicate that is necessary to consider two business performance outcomes caused by CRM: the creation of value for the company (shareholders) and the creation of value for customers [7]. To understand how CRM creates value for the customer, different measures have been proposed: customer satisfaction [68,70]; customer retention [63,72]; customer loyalty [16,68]; service personalization [18,24]; and improved customer service [24,68]. Moreover, other measures have been used to reflect how CRM creates value for the business: profitability [20,63,70]; sales increase [4,68]; and market-share increase [4,79]. This research considered both business performance outcomes.

Next, we will describe the proposed research model and hypotheses, reflecting the relationships between the mentioned variables.

3. Research model and hypotheses

As previously described, the intersection of the RBV and the KBV of the firm provides the theoretical grounding for the study. Considering that the usefulness of every theory depends on proper replications and extensions that provide new insights and add to the existing stock of knowledge [65], we will apply this theoretical grounding to CRM, developing a research model to analyze its success. The RBV has been widely used to examine how IT investments can result in improved firm performance [9,41,75], and these studies evidence that technological resources do not act in isolation; instead, they play an interdependent role with other firm resources. Consequently, their impact on performance depends on other constructs that can be considered potential mediators.

Based on the previous literature review, our model considers CRM technology infrastructure as a basic resource; organizational commitment and knowledge management are considered as complementary resources or potential mediators. The structure of the model is reflected in Fig. 1. Next, the interrelationships among the different variables and their theoretical meaning are justified.

3.1. The influence of CRM technology infrastructure on organizational commitment and knowledge management

CRM technology infrastructure comprises the IT solutions deployed for the specific purpose of better initiating, maintaining and/or terminating customer relationships [59]. This technology infrastructure plays a substantial role, linking front- (e.g., sales) and back-office (e.g., logistics) functions to provide for the efficient and effective management of interactions across different customer touch points (e.g., the Internet, direct mail, call centers) [17]. CRM technology infrastructures enable firms to harness the power of databases, data mining, and interactive (e.g., Internet) technologies to collect and store unprecedented amounts of customer data and build knowledge that is crucial to effective relationship management [80]. However, the role of technology infrastructure should not be overemphasized because the success of CRM applications will depend on their successful integration with people and processes firmwide [17]. Accordingly, the issue of resource complementarity is a relevant topic when analyzing IT resources from an RBV, and it has been observed that performance depends on how IT is integrated with organizational resources [75].

CRM technology infrastructure, when properly implemented, offers numerous advantages to employees, enabling relevant information to be readily available throughout the organization, thus providing employees with in-depth customer information when they need it. A suitable CRM technology infrastructure provides a single customer view at every point of contact, enabling the automatization of diverse processes, shrinking the workflow and eliminating non-productive information. It facilitates daily work [22].

Shum et al. [68] empirically observe that organizational commitment is an important mediating variable between technological factors and successful CRM implementation. CRM technology infrastructure not only facilitates employees’ job performance but also encourages active participation from employees and reduces role ambiguity, meaning that the implementation of the right CRM technology infrastructure is often associated with stronger levels of affective commitment among employees. Chang [14], through an analysis of three case studies, empirically observes that after overcoming initial resistance from employees, the implementation of a CRM system effectively provides comprehensive support to service personnel (thus reducing their workload) and enhances their organizational learning. Given the right investment in an appropriate technology infrastructure, employees appreciate the value of CRM through using the more effective new system and experiencing a reduction in workload, both of which can improve their commitment to the initiative [68]. Based on this, we propose the following hypothesis:

Hypothesis 1. An appropriate CRM technology infrastructure will be positively related to high levels of organizational commitment.

Companies have thousands of customers, and one of the principal ways to gain relevant knowledge about those customers is the use of specific technological tools. A CRM technology infrastructure enables firms to more easily acquire, warehouse, analyze, transfer and use data, information and knowledge about customer behavior and firm activity [64]. The availability of a CRM technology infrastructure to capture data and information (by retaining in the CRM database information such as customer names, buying profiles, problems and complaints) is a first step in the process of getting to know customers better and thus optimally satisfying their demands. A suitable CRM technology infrastructure allows companies to identify profitable customers and to develop differentiated strategies based on the knowledge available about those customers [62]. A suitable CRM technology infrastructure

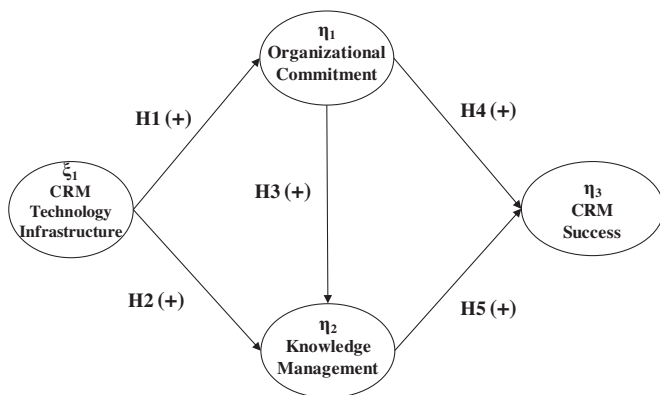


Fig. 1. Hypothesized model. This figure depicts the suggested research model, including the four variables (CRM technology, organizational commitment, knowledge management and CRM success) and the five hypotheses proposed.

also improves an organization's ability to sustain profitable customer relationships by gathering and analyzing knowledge about profitable customers, facilitating more effective firm–customer interactions, and streamlining the customization of products and services [76].

Drawing on the KBV of the firm [30], we observe that in today's economy, knowledge represents a critical asset for organizations and that tangible resources (e.g., IT infrastructure) must be combined and applied with knowledge management processes. Consequently, these processes may play a complementary role, moderating the impact of CRM technology infrastructure on performance. A CRM technology infrastructure provides firms with not only the database technology needed to store large amounts of customer data but also the necessary tools to derive and disseminate actionable intelligence from that data [80]. Therefore, the availability of a CRM technology infrastructure becomes a prerequisite for proper knowledge management [64]. To better explain the underlying mechanism that sustains this specific relation, we draw on the push-pull model. Based on the above discussion, we note that CRM initiatives enable better knowledge management, pushing the company toward a more effective use of customer knowledge.

In this sense, Chen and Chen [19] empirically observe the strategic relevance of CRM technology infrastructure as an enabler of knowledge-management processes, and note that CRM technology infrastructure allows firms to leverage an abundance of information from multiple locations, enhancing market segmentation and offering better knowledge of customers' buying behavior. Khodakarami and Chan [34] also find empirical evidence that CRM technology infrastructure plays a key role supporting customer knowledge creation processes. Thus, we propose the following hypothesis:

Hypothesis 2. An appropriate CRM technology infrastructure will be positively related to effective knowledge management.

3.2. *The influence of organizational commitment on knowledge management*

Although customer data and information may be processed with computers, customer knowledge is always related to human activity, and therefore, the knowledge-management process will be highly dependent upon a firm's technological and human resources [80]. Grant [30] suggests that the biggest challenge of the KBV of the firm is effective coordination and cooperation among organizational members because their knowledge is specialized and must be integrated. Thus, the fact of having employee-empowerment management approaches that promote organizational commitment will be beneficial to knowledge integration and diffusion.

Ultimately, an organization depends on its employees to collect and store customer data, information and experience. It also depends on its employees to utilize stored customer data, developing new practices based on analysis of existing knowledge and therefore improving the customer experience [66]. A proper CRM technology infrastructure encourages the collection of both external and internal knowledge. The acquisition of external knowledge (primarily about customers) requires crossing organizational boundaries and is enabled by integrated technological tools and organizational commitment. In contrast, internal-knowledge capture must be the routine responsibility of all members of an organization, meaning that organizational commitment will play a key role in the process [14]. Committed employees enable a firm to initiate the sharing of customer knowledge, to overcome functional barriers, and to devote itself to customer-centric actions (such as personalization) based on that

knowledge. Along with organizational structures and processes, an organization's system for rewards and incentives can determine the effectiveness of knowledge-management activities because such systems enhance staff commitment. Incentive systems should motivate workers to take time to generate and share new knowledge, breaking down functional barriers and ensuring adequate focus on customer interactions [32]. The role of top management support is also fundamental. Committed managers who encourage a common vision and shared values generate a sense of involvement and contribution among employees, thus promoting knowledge-management behaviors [29].

Some empirical studies have confirmed a significant linkage between organizational commitment and knowledge management. Salojärvi et al. [64] have examined the importance of organizational factors in enhancing customer-knowledge utilization and have observed that both top-management support and the use of committed teams have a direct impact on knowledge management. Additionally, Shang and Lin [66] have identified human-related process as an important enabler of knowledge management, and have observed that high employee commitment affects an organization's CRM in terms of its acquisition, management and sharing of customer knowledge. Thus, we propose the following hypothesis:

Hypothesis 3. High levels of organizational commitment will be positively related to effective knowledge management.

3.3. *The influence of organizational commitment and knowledge management on CRM success*

The human factor is crucial to the success of a CRM strategy. In recent years, the “people aspect” in the definition of CRM as people, processes and technology has begun to receive attention in the literature [33]. To successfully implement CRM, an organization needs to create an environment that leads employees to a new way of thinking about customers and to commit to the organizational change involved in CRM [66].

In the RBV of the firm, in analyzing the relationship between IT resources and performance, it has been observed that organizational variables such as top management commitment, organizational structure and corporate culture act as potential mediators, playing a key complementary role [75]. This theory clearly recognizes the strategic importance of people, highlighting the relevance of human capital skills and employee behavior as determinants of sustainable competitive advantage [6].

In the context of CRM, companies usually have given excessive prominence to technological aspects, believing that the more technology, the better and forgetting to promote the commitment of organizational members. This has led to notorious failures in the implementation of CRM [61]. Even with the best definitions of processes and the most advanced technology, the relationship between people is crucial. Employees play a leading role in promoting and nurturing stable relationships with customers and therefore, it is fundamental to gain their involvement in—and commitment to—the CRM initiative and to motivate them to reach the proposed objectives [43].

Organizational commitment builds positive energy for an organization to achieve company goals and has proven to be key to CRM success [72]. CRM involves an organizational transformation that clearly affects the heart of the business and requires overt commitment, first by top management and then by all levels of the organization. Managers must convince employees of the benefits and potential results of the strategy. They must not only become the main promoters of CRM but also convey their motivation and commitment to all levels of the company [43]. Like other technological projects, to create value, CRM initiatives must

have a project champion: a person with authority, a leader who can make things happen [46]. In the meantime, employees are responsible for executing day-to-day processes and are actually interacting with customers. Consequently, they need to be convinced and motivated because they are the ones who will use the CRM technology infrastructure [72]. The longer the employees feel motivated and satisfied, the higher their level of commitment to the company [43]. In this context, there are two factors that seem particularly relevant to enabling employee commitment: the firm's training system and its reward system [66,68]. It is crucial to provide employees with training courses that help them to acquire the necessary knowledge and skills related to CRM processes. In addition, having a coherent incentive system can strengthen the impact of CRM processes on firm performance because incentives increase employees' commitment to the initiative [25].

Based on the previous discussion, we assume that organizational commitment from multiple levels will be requested to assure success in CRM initiatives. Accordingly, from the perspective of the push-pull theory, a committed organization with proper leadership and rewards systems will act as a pull factor driving CRM success.

Previous studies have also found a direct impact of organizational factors on CRM success. Mendoza et al. [43] have observed that the most relevant success factors for CRM implementation are commitment by employees and managers. Similarly, Shum et al. [68] have empirically observed a correlation between employees' commitment to the CRM initiative and positive outcomes for firm performance. Based on this, we propose the following hypothesis:

Hypothesis 4. High levels of organizational commitment will be positively related to CRM success.

The KBV concludes that in the current environment, a firm's capability to create and utilize knowledge has become the most important source of its sustainable competitive advantage [30]; therefore, knowledge management will play a crucial role when implementing any strategic initiative.

From a CRM standpoint, knowledge management processes are concerned with all of the activities directed toward creating and leveraging the market intelligence that firms need to build and maintain a portfolio of customer relationships that maximizes organizational profitability [80]. In CRM, the challenge is to identify and track profitable customers, and to satisfy and retain them, developing valuable relationships [12]. To this end, the KM processes of the acquisition, dissemination and utilization of customer knowledge will be the cornerstone of a CRM initiative.

Knowledge-management processes enable companies to collect and store unprecedented amounts of customer data and information, build knowledge from that data and information, and disseminate it across the organization. In this study, we have considered three processes inside the knowledge management concept: knowledge acquisition, sharing and utilization. These processes will help organizations to tailor their products and services and to personalize the entire customer relationship based on the customer's detected needs. Analyzing customer knowledge, companies can also anticipate desertion by analyzing past complaints and problems [43]. Knowledge-management processes allow a firm to achieve a holistic view of its customers internally and to provide a unified face to all of its customers externally [37]. This leads to increased customer satisfaction and ultimately to economic profitability [44]. Thus, knowledge management is deemed crucial to effective relationship management [80].

Whereas previously the majority of CRM research focused on technological aspects, the critical role of knowledge management as a determinant of CRM success is beginning to be recognized

[21,44]. In this sense, Gebert et al. [28] have demonstrated that CRM and knowledge management have the potential to be synergistic and should be used in conjunction with each other. Likewise, Campbell [13] has empirically observed the importance of harnessing knowledge-based competences when implementing CRM because this accumulated knowledge enables firms to develop customer-specific strategies, which can become a source of competitive advantage. Thus, we propose our final hypothesis:

Hypothesis 5. Effective knowledge management will be positively related to CRM success.

4. Methodology

This section presents the research methodology used in this study. We first describe the sample used and then discuss how each of the variables included in the study is operationalized. Finally, we present the statistical analysis.

4.1. Sample and procedure

We initially interviewed general managers in the hotel sector, consultants and academics interested in strategic variables. The purpose of the interviews was to analyze the primary difficulties with the questionnaire, to obtain the interviewees' suggestions and to confirm that the items would provide the information desired in the research. After the interviews, we drew up a structured questionnaire to understand better how hotel general managers face the studied issues. The hotel industry was chosen because tourism is an important and extremely competitive sector characterized by its innovative behavior [48]. Hospitality is one of the most relevant activities within the tourism sector, which has itself become an increasingly important source of economic and social development [78]. For different reasons, this study specifically targeted European hotels. First, Europe is a major tourism destination, accounting for 52% of all international arrivals worldwide [78]. Second, the European hotel market, estimated at 205,000 facilities, represents half of the global market [10]. Likewise, we chose to survey hotel general managers for a number of reasons: they are the most knowledgeable about the entire organization; their perception of strategic factors is essential for the improvement of organizational performance; they manage a great deal of information in all departments of the company; they constitute a valuable source for evaluating and molding the different variables under study throughout the organization by determining the types of behavior that are expected and supported; and they are ultimately responsible not only for plotting the organization's direction and plans but also for guiding the actions carried out to achieve organizational goals [77]. Previous studies have also chosen hotel managers as key informants [4,37,79].

The population for this study consisted of three- to five-star hotels, located in Spain or the UK, which were implementing a CRM technology infrastructure. We focused on hotels from Spain and the UK because both countries are considered World Tourism Destinations and are top-10 tourist destinations by international tourism receipts (occupying the fourth and eighth position, respectively) [78]. In addition, we found previous studies conducted in different sectors that included data from companies in both countries [39,42,74]. The hospitality sector, where customer service is fundamental and multiple customer touch points exist, seems ideally positioned to take advantage of CRM technology infrastructures [52]. However, most CRM-related research in hotels has analyzed only specific practices such as loyalty programs [40], and there is still a lack of a widely accepted framework for CRM implementation in the hotel sector [69].

Table 1
Technical details of the research.

Country	Spain	United Kingdom	Total
Sample size (% response)	375 (18.13%)	375 (15.2%)	750 (16.7%)
Sector	Hotel companies		
Methodology	Structured questionnaire		
Universe of population	1912 firms		
Sample error	8.8%		
Confidence level	95%, $p-q=0.50$; $Z=1.96$		
Data collection period	From May to September 2011		

These include sector, geographical location, methodology, universe of population, sample size, sample error, confidence level and period of data collection.

A sample of 750 hotel businesses was selected randomly from a database from Turespaña (Spain's Ministry of Tourism) [73] and a private database from a UK-based company, Simply Data. We made several calls and sent several emails to each business with the goal of increasing the response rate. The general managers knew that the data obtained would be confidential and would be treated in aggregate form. We offered them the option of receiving a comparative study, specific to their firm, of the variables analyzed. This enabled us to obtain 125 valid responses, or an approximate response rate of 16.7% (Table 1). The possibility of non-response bias was checked by comparing the characteristics of the respondents to those of the original population sample. A series of chi-square and *t*-statistics revealed no significant differences between the respondents and the sample, between early and late respondents or based on the type or size of hotel [3]. We also analyzed the nonexistence of significant differences based on the geographical location of hotel (*t*-tests indicated that there was no significant difference in the data based on hotel's location in either Spain or the UK).

Because all measures were collected with the same survey instrument, the possibility of common method bias exists. The authors were aware of that possibility and used several procedures to examine the possibility that common method bias threatened the interpretation of the results. First, Podsakoff et al. [56] provide guidance to reduce common-source bias in this regard, stressing two key goals: (a) to ensure anonymity in survey administration; and (b) to improve items used to measure constructs. This study followed both recommendations. By clearly communicating study goals, assuring respondents of the survey's anonymity and by relying on previously tested scales, the investigation follows the recommendations of Podsakoff et al. [56]. Finally, the research randomized the order of presentation of the survey items across the subjects. Together, these steps minimize common method bias [50]. Second, the investigation also tested the possibility of common method bias using Harman's one-factor test [35,55]. In this study, the one-factor model obtained using principal components analysis yielded several factors with eigen-values greater than 1.0, which accounted for 76% of the total variance. A substantial amount of method variance does not appear to be present because several factors—not just one single factor—were identified, and because the first factor did not account for the majority of the variance [55]. Third, more recently some researchers have used confirmatory factor analysis (CFA) as a more sophisticated method to test common method bias. A worse fit for the one-factor model would suggest that common method variance does not pose a serious threat. In our case, the fit was worse for the unidimensional model than for the measurement model (RMSEA [$\Delta = .100$], NFI [$\nabla = .06$], CFI [$\nabla = .06$], ECVI [$\Delta = 3.065$], AIC [$\Delta = 63.99$]), suggesting that common method bias was not a serious problem. Fourth, another approach that has been used involves adding a first-order factor to all of the measures

as indicators of the researcher's theoretical model. When comparing indicator loadings before and after adding the common latent factor, there were no differences greater than 0.200 and thus, common method bias was not a major threat in our data set [54,56].

4.2. Measures

For each of the four factors, we used a 7-point Likert scale (1 being 'totally disagree', and 7 'totally agree'). All of the items on the scale (see the Appendix) were duly adapted to the present study. An exploratory factor analysis was performed to eliminate the items that did not converge on a single construct. Confirmatory factor analyses reflect that the scales were unidimensional and in each case had adequate validity and reliability ($\alpha = .941, .928, .918$ and $.944$, respectively). The numbers of items on the scales, their derivation, and scores for the confirmatory factor analyses that we developed were as follows:

CRM technology infrastructure: three items developed by Chen and Ching [18] and Sin et al. [70].

Organizational commitment: six items developed by Li [37], Sin et al. [70], Suntorpnithug et al. [72], and Chang et al. [16]; confirmatory factor analysis: $\chi^2_9 = 32.52$; NFI = .96; NNFI = .95; IFI = .97; PGFI = 0.34; RFI = 0.93; CFI = .97.

Knowledge management: three items developed by Beijerse [8], Li [37], Sin et al. [70], and Lin and Lee [38] to measure knowledge acquisition, sharing and utilization.

CRM success: six items developed by Wu [79], Chen and Ching [18], Sin et al. [70], Chang et al. [16], and Suntorpnithug et al. [72]; confirmatory factor analysis: $\chi^2_9 = 23.68$; NFI = .97; NNFI = .97; IFI = .98; PGFI = 0.36; RFI = 0.96; CFI = .98.

4.3. Model and analysis

We used a recursive non-saturated model that took CRM technology infrastructure (ξ_1) as the exogenous latent variable; organizational commitment (η_1) as the first-grade endogenous latent variable; and knowledge management (η_2) and CRM success (η_3) as the second-grade endogenous latent variables (Fig. 1).

5. Results

This section presents the main results of our research. Following the two-step approach advocated by Anderson and Gerbing [2], we estimated a measurement model before examining structural model relationships. We used Lisrel 8.80 to estimate the model. From Table 2, we can see that all the indices show very good fit with the model. The constructs display satisfactory levels of reliability, indicated by composite reliabilities ranging from .91 to .94 and average variance extracted coefficients from .68 to .84. Convergent validity can be judged by examining both the significance of the factor loadings and the average extracted variance ($>.50$). All the multi-item constructs met these criteria, each loading (λ) being significantly related to its underlying factor (*t*-values > 11.79) in support of convergent validity.

The measurements also achieve discriminant validity—i.e., the degree to which a construct differs from others, among all constructs. The comparison of the square root of the AVE with the correlations among constructs (Table 3) revealed that the square root of the AVE for each component was greater than the correlation among components, thus supporting discriminant validity. Further, no confidence interval in the estimation of the correlation between each pair of factors contains the value 1 [2,26]. Another procedure widely used to ensure discriminant validity involves fixing the correlation between two constructs in 1, that is, assuming both constructs are perfectly correlated. To statistically

Table 2
Measurement-model results.

Variables	Items	λ^*	R^2	C.R.	AVE
CRM technology infrastructure	CRMTEC1	0.93*** (29.80)	0.86	0.941	0.844
	CRMTEC2	0.99*** (47.28)	0.98		
	CRMTEC3	0.83*** (14.97)	0.68		
Organizational commitment	COMMIT3	0.88*** (24.99)	0.77	0.928	0.683
	COMMIT5	0.90*** (31.15)	0.81		
	COMMIT6	0.83*** (20.42)	0.68		
	COMMIT7	0.73*** (13.48)	0.53		
	COMMIT8	0.81*** (22.08)	0.65		
	COMMIT9	0.80*** (22.49)	0.64		
Knowledge management	KNOWACQ	0.95*** (35.41)	0.90	0.918	0.791
	KNOWSHAR	0.93*** (37.62)	0.86		
	KNOWUTIL	0.78*** (12.65)	0.61		
CRM success	CRMSUS1	0.84*** (23.45)	0.71	0.944	0.739
	CRMSUS2	0.71*** (11.79)	0.50		
	CRMSUS3	0.85*** (22.34)	0.72		
	CRMSUS4	0.93*** (39.00)	0.86		
	CRMSUS5	0.91*** (27.74)	0.82		
	CRMSUS6	0.90*** (30.50)	0.81		
Goodness-of-fit statistics	$\chi^2_{129} = 194.004$ ($P > 0.01$); ECVI = 2.242; AIC = 278.004; CAIC = 438.793; NFI = 0.971; NNFI = 0.988; IFI = 0.990; PGFI = 0.550; PNFI = 0.818; NCP = 65.004; RFI = 0.965 CFI = 0.990; RMSEA = 0.063				

Notes: λ^* = standardized structural coefficient (t -students are shown in parentheses); R^2 , reliability; C.R., composite reliability; AVE, average variance extracted. *** $p < 0.001$ (two-tailed).

All the indices detailed showed good fit with the model (χ^2 , chi-square; ECVI, expected cross-validation index; AIC, Akaike information criterion; CAIC, consistent Akaike information criterion; NFI, normed fit index; NNFI, non-normed fit index; IFI, incremental fit index; PGFI, parsimony goodness-of-fit index; PNFI, parsimony normed fit index; NCP, non-centered parameterization; RFI, relative fit index; CFI, comparative fit index; and RMSEA, root mean square error of approximation).

Table 3
Discriminant validity.

Variable	1	2	3	4
1. CRM technology infrastructure	0.918	0.41–0.76	0.46–0.77	0.42–0.77
2. Organizational commitment	0.588	0.826	0.64–0.87	0.66–0.88
3. Knowledge management	0.615	0.757	0.889	0.62–0.87
4. CRM success	0.591	0.769	0.745	0.859

Notes: AVE, average variance extracted. The numbers on the diagonal are the square roots of the AVE. Numbers below the diagonal represent the correlations between constructs. Numbers above the diagonal represent the confidence interval between each pair of constructs (95%).

Bold values on the table included on the diagonal are the square roots of the AVE.

test the evidence of discriminant validity, we checked whether the variation occurring between the general model and the restricted model was significant. To do so, given that the restricted model has one more degree of freedom, we studied the variation in the chi-squared statistic. In our study, the two more correlated constructs were organizational commitment and CRM success. The results of the analysis provided adequate evidence of discriminant validity because $\Delta \chi^2 = 32.89$ for 1 degree of freedom ($\chi^2 = 226.89$; $df. = 130$ in the restricted model; $\chi^2 = 194.00$; $gl. = 129$ in the general model) was significant at 0.001; therefore, we can reject

the null hypotheses of perfect correlation. The measurement model's fit is good ($\chi^2(129 \text{ d.f.}) = 194.00$ ($p > 0.01$); NFI = 0.97; NNFI = 0.98; IFI = 0.99; PGFI = 0.55; NCP = 65.01; RFI = 0.96; CFI = 0.99; RMSEA = 0.06).

Table 4 presents the results for the structural model depicted in Fig. 2. Structural equation modeling was performed to estimate direct and indirect effects using Lisrel, with the covariance matrix and asymptotic covariance matrix as input. The overall fit of the structural model was good, and the completely standardized path estimates indicate significant relationships among the constructs. If we examine the standardized parameter estimates, the findings show that CRM technology infrastructure affects organizational commitment ($\gamma_{11} = .60$, $p < .001$, $R^2 = .35$). Thus, as predicted in Hypothesis 1, an appropriate CRM technology infrastructure is positively related to high levels of organizational commitment. CRM technology infrastructure offers numerous advantages to employees, enabling access to relevant information and facilitating daily work, which promotes organizational commitment [68]. CRM technology infrastructure also directly affects knowledge management ($\gamma_{21} = .27$, $p < .01$). A suitable CRM technology infrastructure enables firms more easily to acquire, transfer and use data, information and knowledge about customer behavior and

Table 4
Structural model results (direct, indirect and total effects).

Effect from	To	Direct effects	t	Indirect effects	t	Total effects	t
CRM technology infrastructure	→ Organizational commitment	0.60***	6.12			0.60***	6.12
CRM technology infrastructure	→ Knowledge management	0.27**	3.16	0.36***	4.96	0.63***	7.58
CRM technology infrastructure	→ CRM success			0.53***	5.97	0.53***	5.97
Organizational commitment	→ Knowledge management	0.60***	6.70			0.60***	6.70
Organizational commitment	→ CRM success	0.48***	3.70	0.23**	2.71	0.71***	8.90
Knowledge management	→ CRM success	0.38**	3.05			0.38**	3.05
Goodness-of-fit statistics	$\chi^2_{130} = 194.75$ ($P > 0.01$); ECVI = 2.23; AIC = 276.74; CAIC = 433.70; NFI = 0.97; NNFI = 0.98; IFI = 0.99; PGFI = 0.55; PNFI = 0.82; NCP = 64.74; RFI = 0.96; CFI = 0.99; RMSEA = 0.06						

Notes: Standardized structural coefficients.

^a $p < .10$. * $p < .05$.

** $p < .01$.

*** $p < .001$.

This table displays standardized parameter coefficients showing the relationship between the four variables of the model (see abbreviations in legend for Table 3).

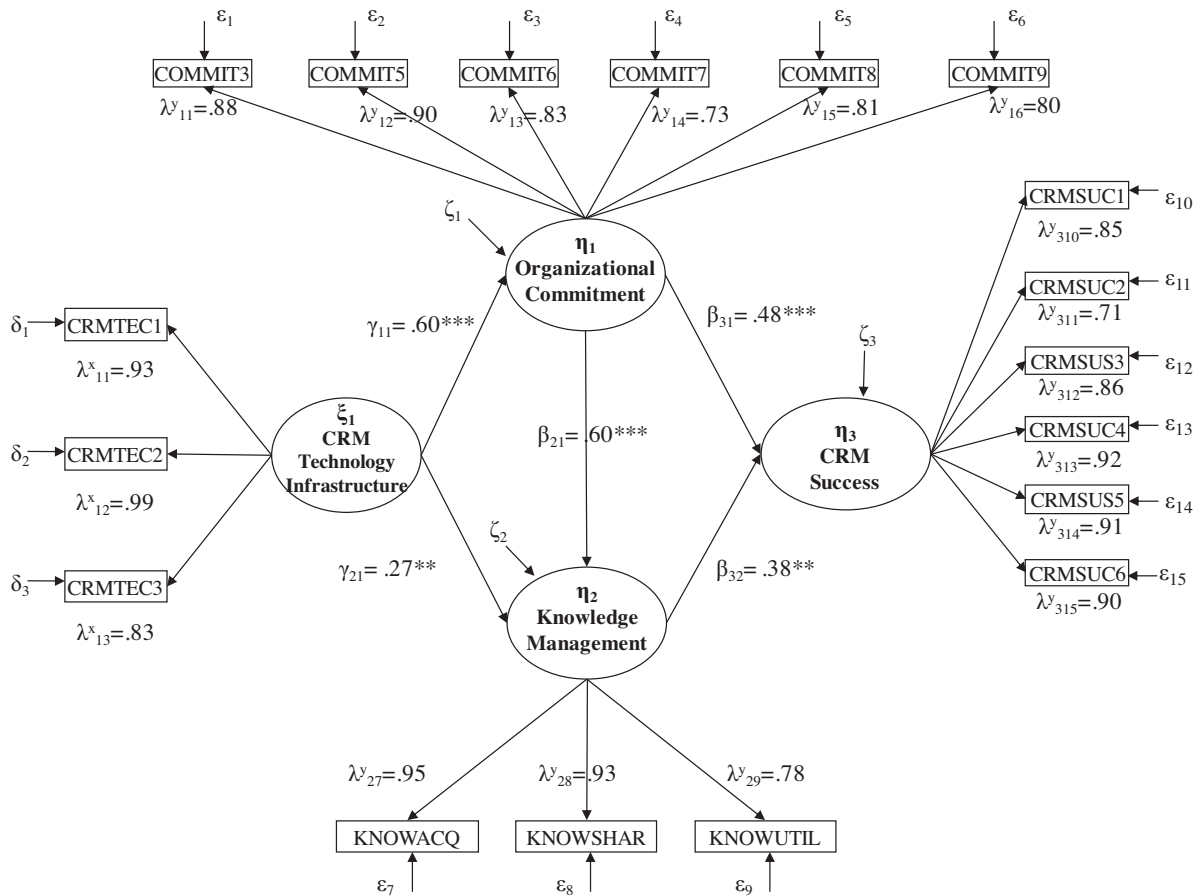


Fig. 2. Results of structural equation model estimated using Lisrel. This figure shows the four latent variables, each with its measurement items and the estimated parameters, indicating the significant paths between variables. As can be observed, all of the parameters were significant; therefore, the five proposed hypotheses were supported.

company activity [19,62,64]. Further, we find an indirect effect (.36, $p < .001$) of CRM technology infrastructure on knowledge management due to organizational commitment (.60 × .60; see Bollen [11] for calculation rules). The global influence of CRM technology infrastructure on knowledge management is thus .63 ($p < .001$), which supports Hypothesis 2. Organizational commitment affects knowledge management ($\beta_{21} = .60$, $p < .001$, $R^2 = .62$), which supports Hypothesis 3. The fact of promoting organizational commitment by employees and management, with organizational structures, organizational system for rewards and incentives, and so on, was beneficial to knowledge acquisition, sharing and utilization [14,29,66]. Comparing the magnitudes of these effects, we can observe that the effect of organizational commitment on knowledge management is larger than the effect of CRM technology infrastructure on knowledge management.

Finally, CRM success is directly affected by organizational commitment ($\beta_{31} = .48$, $p < .001$) and knowledge management ($\beta_{32} = .38$, $p < .01$). Organizational commitment builds positive momentum for an organization to achieve its goals and has proven

crucial for CRM success [43,68,72]. The KM processes of acquisition, dissemination and utilization of customer knowledge were also the cornerstone of CRM success [21,43,44]. Organizational commitment also indirectly affects CRM success (.23, $p < .01$) through knowledge management (.60 × .38). The global influence of organizational commitment on CRM success is .71 ($p < .001$). Hypotheses 4 and 5 are therefore supported. In addition to these effects, CRM technology infrastructure indirectly affects CRM success (.53, $p < .001$) through organizational commitment (.60 × .48), organizational commitment–knowledge management (.60 × .60 × .38), and knowledge management (.27 × .38). Comparing the magnitudes of these effects indicates that the effect of organizational commitment on CRM success is larger than the effect of CRM technology infrastructure or knowledge management on CRM success, which is very well explained by the proposed model ($R^2 = .65$).

In testing the theoretical framework, we used several nested models, each incorporating different assumptions about parameters. Comparison to reasonable alternative models is recommended

Table 5
Model statistics against theoretical model.

Model	Description	χ^2	$\Delta \chi^2$	RMSEA	NFI	NNFI	CFI	ECVI	AIC	NCP
1	Theoretical	194.75		0.063	0.97	0.98	0.99	2.23	276.74	64.74
2	W.R. Organizational commitment to knowledge management	220.49	25.74	0.074	0.96	0.98	0.98	2.42	300.48	89.48
3	W.R. Organizational commitment to CRM success	201.42	6.67	0.066	0.96	0.98	0.98	2.26	281.41	70.41
4	W.R. Knowledge management to CRM success	198.61	3.86	0.065	0.97	0.98	0.98	2.24	278.61	67.61

Notes: W.R., without relationship; $n = 125$.

This table summarizes the estimated competing models, showing how the proposed theoretical model represents the most acceptable and parsimonious model (WR, without relationship).

as a means of showing that a hypothesized model is the best representation of the data [11]. The summary of statistics in Table 5 indicates that Model 1 is preferable to the others, supporting the inclusion of a model with these relationships among the constructs analyzed. The proposed theoretical model (Fig. 2) represents the most acceptable and parsimonious model. For example, if we compare Model 1 (theoretical model) and Model 2, we can see that the latter has a worse RMSEA ($\Delta = .011$), NFI ($\nabla = .01$), CFI ($\nabla = .01$), ECVI ($\Delta = .19$), AIC ($\Delta = 23.74$) and NCP ($\Delta = 24.74$). The results show that Model 1 is preferred to Model 2 ($\Delta\chi^2 = 25.74$) and to the other models.

6. Conclusions and future research

6.1. Discussion and theoretical implications

CRM has become a priority for companies, and firms around the world are making large investments in CRM initiatives. However, previous empirical research examining the success of CRM technology infrastructures has produced inconsistent evidence. In the face of these conflicting results, it is imperative to clarify the overall mechanism and the conditions by which CRM technology infrastructure successfully enhances business effectiveness [16]. To shed light on the topic, and drawing on the RBV and the KBV of the firm, this study proposed and empirically tested a model to analyze CRM success using data from an international sample of companies. This study makes two important contributions: (1) empirically displaying the mechanism through which CRM technology infrastructure transforms firm performance, the different resources involved in the process and how they interrelate; (2) providing evidence of the crucial role played by organizational commitment in this process, which not only acted as a relevant mediator but also exerted the strongest direct impact on CRM success. Each of these points is discussed in turn.

First, this study responds to the imperative to identify returns on CRM technology infrastructure. Our findings show that a CRM initiative, properly implemented, has positive effects on company results, improving profitability and market share and increasing sales income. In addition, our findings demonstrate how developing an appropriate CRM technology infrastructure creates value for customers, improving customer satisfaction and loyalty and enabling the personalization of products and services.

Our findings suggest that the impact of CRM technology infrastructure on performance can be studied as a process in which different resources are involved and interact. Following the assumptions of the RBV and the KBV, we included knowledge management and organizational commitment as complementary resources or potential mediators in our research model [33,75]. We observed that CRM technology infrastructure plays an enabling role, only exerting an indirect impact on CRM success, which is mediated by knowledge management and organizational commitment. Our findings validate existing “wisdom” in the IS literature, in which other scholars have concluded that to be successful, organizations must combine IT with other resources [9,20].

With respect to the role played by knowledge management, the results show how knowledge represents a critical asset for organizations when implementing a CRM technology infrastructure [28,44]. It was noted that knowledge management processes leverage the impact of a CRM technology infrastructure, in turn enhancing firm performance [80]. Although previous literature has emphasized the relevance of knowledge management when implementing a CRM initiative, no study has empirically shown how these processes (knowledge acquisition, sharing and utilization) exert a mediating role on CRM technology infrastructure.

Therefore, this study offers novel insights, applying the postulates of the KBV to a CRM context.

A second contribution of this study is to highlight the substantial effect of organizational commitment on CRM success. Our results confirm that the human factor is critical to the success of a CRM initiative because organizational commitment exerts the most relevant direct impact and exerts an indirect impact through knowledge management. It is important to emphasize that organizational commitment is an integrative variable that comprises different factors such as top management support and commitment; leadership; employees' commitment; and training and rewards systems. It is true that the relevance of the “people aspect” on CRM success has been recognized [33]. However, previous literature has analyzed the impact of the organizational variables in CRM success in a fragmented way, focusing only on specific aspects. In this vein, Shum et al. [68] have observed the impact of employee commitment to change; Saini et al. [63] have observed the relevance of top management championship and leadership practices; Ernst et al. [25] have considered CRM reward systems; and Suntorpnithug et al. [72] have focused on top management commitment and employee empowerment. In our study, we have developed a multidimensional construct that integrates all of these relevant organizational variables, and we have tested his conjoint impact, demonstrating its leading role in the implementation of a CRM technology infrastructure. This contribution represents a point of departure for continued investigations of CRM success, developing this organizational construct at finer-grained levels.

In summary, this study highlights the mechanism through which CRM technology infrastructure creates value for the firm and how knowledge management and organizational commitment act as main drivers of this process.

An additional contribution of the paper is its examination of the phenomenon of CRM success in a hotel context. Despite the economic relevance of the sector and the key role that relationships with customers play in the hospitality industry, CRM research in hotels has been scarce [40,69] and several calls for additional studies have been made. Therefore, the results of this study provide innovative insight to researchers and practitioners in the hospitality industry.

6.2. Managerial implications

This study has also interesting implications for managers in that it provides a useful model for the successful implementation of CRM technology infrastructure. The study's results confirm that merely investing in IT does not automatically lead to success; thus, possession of a CRM technology infrastructure can be considered as a necessary, but not sufficient, condition for achieving CRM objectives. Different technological resources should be integrated throughout an organization to generate valuable results, whereas knowledge management and organizational commitment need to be fostered by top managers.

Given the important role played by knowledge management, managers should promote an organizational culture encouraging employees to acquire, share and use knowledge effectively: they should develop channels that enable two-way communication with customers and between departments, and they should foster cross-functional knowledge-sharing among employees [17]. However, organizational commitment has shown to be the most relevant driver of CRM success, and managers are directly responsible for gaining the commitment and involvement of the entire organization. To do so, they need to champion CRM implementation and develop specific initiatives to foster employee commitment by establishing proper training for the new system,

introducing new reward and incentive programs consistent with the CRM philosophy, and clearly communicating the CRM objectives, motivating employees to engage in the necessary organizational change [68]. Companies must therefore invest heavily not only in technology infrastructures but also in knowledge management processes and in employee training and motivation, along with the change management that should follow an investment in CRM.

6.3. Limitations and future research

This investigation presents some limitations that should be considered. First, the variables are measured based on the perceptions of general managers (single respondents), which consequently have a certain degree of subjectivity. We chose general managers of firms as respondents because their knowledge of these strategic variables is more comprehensive [e.g., 67]. In the absence of published data on these variables and alternative sources of comparative data, we followed the methods used by previous studies [e.g., 4,37,79].

Second, although Harman's one-factor test and another method test found common method variance not to be a problem, it might still be present [35,55]. Although Spector [71] has stressed that it is incorrect to presuppose that the use of a single method automatically produces systematic bias, future investigation should collect measures of independent and dependent variables from diverse data sources to reduce the influence of any response bias [56].

Third, this research is cross-sectional, which highlights the need to conduct longitudinal studies in the future to explore how the variables in our analysis evolve over time. This is especially interesting in light of the dynamic nature of some of the variables presented. Although we tested the most plausible directions for the pathways in the proposed model, longitudinal research is required to determine the direction of the relationship and to identify possible reciprocal processes. We have attempted to temper this limitation by paying attention to theoretical arguments, by rationalizing the relationships analyzed and by integrating temporal considerations when measuring the variables [31]. Fourth, future research should focus on a larger sample, preferably from other countries and other sectors.

Finally, the model analyzes only the relationship between CRM technology and success through knowledge management and organizational commitment. An acceptable proportion of CRM success (65%) is explained by these variables, but other factors could also be considered, including key customer focus [70], marketing capabilities [16] and environmental pressure [15]. We might also examine other aspects of CRM success, such as improved competitive position [72], increased service quality [18] and the acquisition of new customers [16].

Appendix

A.1. CRM technology

Indicate your level of agreement with the following statements with respect to the hotel that you manage:

1. My hotel has the appropriate portfolio of CRM technologies to effectively serve its customers.
2. My hotel has the appropriate hardware infrastructure to serve its customers.
3. My hotel's information systems are integrated across all of its different functional areas.

A.2. Organizational commitment

Indicate your level of agreement with the following statements with respect to the hotel that you manage:

3. The senior management in my hotel considers CRM to be a top priority.
5. Senior managers motivate and encourage employees to live the CRM vision.
6. Training programs are designed to help employees develop the skills needed to manage customer relationships effectively.
7. Employee performance is measured and rewarded based on employees' ability to effectively satisfy customer needs.
8. Our employees are well trained in the use of CRM technologies.
9. Employees at all levels are committed to using CRM to achieve high levels of customer satisfaction.

A.3. Knowledge management

Indicate your level of agreement with the following statements with respect to the hotel that you manage:

1. Acquisition: My hotel has established processes to acquire knowledge about customers.
2. Sharing: My hotel encourages employees to share knowledge.
3. Utilization: My hotel has established processes to apply knowledge to resolve new problems.
4. **CRM success**

CRM in our hotel has:

1. Increased sales income.
2. Improved profitability.
3. Increased market share.
4. Improved customer satisfaction.
5. Improved customer loyalty.
6. Enabled the personalization of products and services.

References

- [1] M. Alavi, D.E. Leidner, Review: KM and KM systems: conceptual foundations and research issues, *MIS Q.* 25 (1), 2001, pp. 107-136.
- [2] J.C. Anderson, D.W. Gerbing, Structural equation modeling in practice: a review and recommended two-step approach, *Psychol. Bull.* 103 (3), 1988, pp. 411-423.
- [3] J.S. Armstrong, T.S. Overton, Estimating nonresponse bias in mail surveys, *J. Marketing Res.* 14, 1977, pp. 396-402.
- [4] J. Bang, Understanding Customer Relationship Management from Manager's and Customer's Perspective: Exploring the Implications of CRM Fit, Market Orientation, and Market Knowledge Competence, (Doctoral thesis), University of Rhode Island, USA, 2005.
- [5] J.B. Barney, Firm resources and sustained competitive advantage, *J. Manag.* 17 (1), 1991, pp. 99-120.
- [6] J.B. Barney, M. Wright, D.J. Ketchen, The resource-based view of the firm: ten years after 1991, *J. Manag.* 27 (6), 2001, pp. 625-641.
- [7] J.U. Becker, G. Greve, S. Albers, The impact of technological and organizational implementation of CRM on customer acquisition, maintenance, and retention, *Int. J. Res. Mark.* 26 (3), 2009, pp. 207-215.
- [8] R.P.U. Beijerse, Questions in KM: defining and conceptualising a phenomenon, *J. Knowl. Manag.* 3 (2), 1999, pp. 94-109.
- [9] A.S. Bharadwaj, A resource-based perspective on information technology capability and firm performance: an empirical investigation, *MIS Q.* 24 (1), 2000, pp. 169-196.
- [10] P. Bohdanowicz, European hoteliers' environmental attitudes: greening the business, *Cornell Hosp. Q.* 46 (2), 2005, pp. 188-204.
- [11] K.A. Bollen, *Structural Equations with Latent Variables*, Wiley-Interscience Publication, Michigan, 1989.
- [12] W. Boulding, R. Staelin, M. Ehret, W.J. Johnston, A Customer Relationship Management roadmap: what is known, potential pitfalls, and where to go, *J. Mark.* 69 (4), 2005, pp. 155-166.

- [13] A.J. Campbell, Creating Customer Knowledge competence: managing customer relationship management programs strategically, *Ind. Market. Manag.* 32 (5), 2003, pp. 375–383.
- [14] H.H. Chang, Critical factors and benefits in the implementation of customer relationship management, *Total Qual. Manag. Bus. Excell.* 18 (5), 2007, pp. 483–508.
- [15] T.M. Chang, L.L. Liao, W.F. Hsiao, An empirical study of the e-CRM performance influence model for service sectors in Taiwan, in: *Proceedings of the 2005 IEEE International Conference on e-Technology, e-Commerce and e-Service*, Hong Kong, 2005, 2005, pp. 240–245.
- [16] W. Chang, J.E. Park, S. Chaib, How does CRM technology transform into organizational performance? A mediating role of marketing capability *J. Bus. Res.* 63 (8), 2010, pp. 849–855.
- [17] I.J. Chen, K. K. Popovich, Understanding customer relationship management (CRM): people, process and technology, *Bus. Process Manag. J.* 9 (5), 2003, pp. 672–688.
- [18] J.S. Chen, R.K.H. Ching, An empirical study of the relationship of IT intensity and organizational absorptive capacity on CRM performance, *J. Global Inform. Manag.* 12 (1), 2004, pp. 1–17.
- [19] Q. Chen, H.M. Chen, Exploring the success factors of eCRM strategies in practice, *J. Database Mark. Customer Strateg. Manag.* 11, 2004, pp. 333–343.
- [20] T. Coltman, T.M. Devinney, D.F. Midgley, Customer relationship management and firm performance, *J. Inform. Technol.* 26 (3), 2011, pp. 205–219.
- [21] A. Croteau, P. Li, Critical success factors of CRM technological initiatives, *Can. J. Adm. Sci.* 20 (1), 2003, pp. 21–34.
- [22] A. Curry, E. Kkolou, Evaluating CRM to contribute to TQM improvement—a cross case comparison, *TQM Mag.* 16 (5), 2004, pp. 314–324.
- [23] N.F. Doherty, C. Ashurst, J. Peppard, Factors affecting the successful realisation of benefits from systems development projects: findings from three case studies, *J. Inform. Technol.* 27, 2012, pp. 1–16.
- [24] N.F. Doherty, N. Lockett, Mind the gap: exploring the links between the expectations of relationship marketing and the reality of electronic-CRM, *Int. J. e-Bus. Manag.* 2 (2), 2008, pp. 19–34.
- [25] H. Ernst, W.D. Hoyer, M. Krafft, K. Krieger, Customer relationship management and company performance—the mediating role of new product performance, *J. Acad. Market. Sci.* 39 (2), 2010, pp. 290–306.
- [26] C. Fornell, D.F. Larcker, Evaluating structural equation models with unobservable variables and measurement error, *J. Marketing Res.* 18 (1), 1981, pp. 39–50.
- [27] Gartner, Predicts 2011: Latest CRM Trends at the Gartner 360 Customer Summit, 2013 <http://www.gartner.com/newsroom/id/2730317>.
- [28] H. Gebert, M. Geib, L. Kolbe, W. Brenner, Knowledge-enabled customer relationship management: integrating customer relationship management and KM concepts, *J. Manag.* 7 (5), 2003, pp. 107–123.
- [29] A.H. Gold, A. Malhotra, A.H. Segars, Knowledge management: an organizational capabilities perspective, *JMIS* 18 (1), 2001, pp. 185–214.
- [30] R.M. Grant, Toward a knowledge-based theory of the firm, *Strateg. Manag. J.* 17, 1996, pp. 109–111.
- [31] J.F. Hair, R. Anderson, R.L. Tatham, W.C. Black, 7th ed., *Multivariate Data Analysis*, Pearson-Prentice Hall, Upper Saddle River, NJ, 2009.
- [32] S. Jayachandran, S. Sharma, P. Kaufman, P. P. Raman, The role of relational information processes and technology use in customer relationship management, *J. Market.* 69 (4), 2005, pp. 77–192.
- [33] A. Keramati, H. Mehrabi, N. Mojir, A process-oriented perspective on customer relationship management and organizational performance: an empirical investigation, *Ind. Market. Manag.* 39 (7), 2010, pp. 1170–1185.
- [34] F. Khodakarami, Y.E. Chan, Exploring the role of customer relationship management (CRM) systems in customer knowledge creation, *Inform. Manag.* 2014 <http://dx.doi.org/10.1016/j.im.2013.09.001>, (in press).
- [35] A.M. Konrad, F. Linnehan, Formalized HRM structures: coordinating equal employment opportunity or concealing organizational practice? *Acad. Manag. J.* 38 (3), 1995, pp. 787–820.
- [36] L. Li, J. Mao, The effect of CRM use on internal sales management control: an alternative mechanism to realize CRM benefits, *Inform. Manag.* 49 (6), 2012, pp. 269–277.
- [37] P. Li, The Critical Success Factors of Customer Relationship Management (CRM) Technological Initiatives, (Doctoral thesis), Concordia University, Canada, 2001.
- [38] H.F. Lin, G.G. Lee, Impact of organizational learning and KM factors on e-business adoption, *Manag. Decis.* 43 (2), 2005, pp. 171–188.
- [39] J. Llonch, R. Eusebio, T. Ambler, Measures of marketing success: a comparison between Spain and the UK, *Eur. Manag. J.* 20 (4), 2002, pp. 414–422.
- [40] A.S. Lo, L.D. Stalcup, G. Lee, Customer relationship management for hotels in Hong Kong, *Int. J. Contemp. Hosp. Manag.* 22 (2), 2010, pp. 139–159.
- [41] N. Melville, K. Kraemer, V. Gurbaxani, Information technology and organizational performance: an integrative model of IT business value, *MIS Q.* 28 (2), 2004, pp. 283–322.
- [42] C. Mena, B. Adenso-Diaz, O. Yurt, The causes of food waste in the supplier–retailer interface: evidences from the UK and Spain, *Resources, Conserv. Recycl.* 55 (6), 2011, pp. 648–658.
- [43] L.E. Mendoza, A. Marius, M. Pérez, A.C. Grimán, Critical success factors for a customer relationship management strategy, *Inform. Softw. Technol.* 49 (8), 2007, pp. 913–945.
- [44] H. Nejatian, I. Sentosa, S.K. Piaralal, A.M. Bohari, The influence of customer knowledge on CRM performance of Malaysian ICT companies: a structural equation modeling approach, *Int. J. Bus. Manag.* 6 (7), 2011, pp. 181–198.
- [45] B. Nguyen, D.S. Mutum, A review of customer relationship management: successes, advances, pitfalls and futures, *Bus. Process Manag. J.* 18 (3), 2012, pp. 400–419.
- [46] T.H. Nguyen, J.S. Sherif, M. Newby, Strategies for successful CRM implementation, *Inform. Manag. Comput. Secur.* 15 (2), 2007, pp. 102–115.
- [47] I. Nonaka, The knowledge-creating company, *Harv. Bus. Rev.* 69 (6), 1991, pp. 96–104.
- [48] F. Orfila-Sintes, J. Mattsson, Innovation behavior in the hotel industry, *Omega* 37, 2009, pp. 380–394.
- [49] P. Palvia, P. Pinjani, E.H. Sibley, A profile of information systems research published in information and management, *Inform. Manag.* 44, 2007, pp. 1–11.
- [50] S.K. Pandey, B.E. Wright, D.P. Moynihan, Public service motivation and interpersonal citizenship behaviour in public organizations: testing a preliminary model, *Int. Public Manag. J.* 11 (1), 2008, pp. 89–108.
- [51] A. Payne, P. Frow, A strategic framework for customer relationship management, *J. Market.* 69 (4), 2005, pp. 167–176.
- [52] G. Piccoli, P. O'Connor, C. Capaccioli, R. Alvarez, Customer relationship management: a driver for change in the structure of the US lodging industry, *Cornell Hotel Restaur. Adm. Q.* 44 (4), 2003, pp. 61–73.
- [53] E. Plakoyiannaki, N. Tzokas, P. Dimitratos, M. Saren, How critical is employee orientation for customer relationship management? Insights from a case study *J. Manag. Stud.* 45 (2), 2008, pp. 268–293.
- [54] A. Plugge, H. Bouwman, F.J. Molina-Castillo, Outsourcing capabilities, organizational structure and performance quality monitoring: toward a fit model, *Inform. Manag.* 50, 2013, pp. 275–284.
- [55] P.M. Podsakoff, D.W. Organ, Self-reports in organization research: problems and prospects, *J. Manag.* 12 (4), 1986, pp. 531–544.
- [56] P.M. Podsakoff, S.B. MacKenzie, J.Y. Lee, N.P. Podsakoff, Common method biases in behavioural research: a critical review of the literature and recommended remedies, *J. Appl. Psychol.* 88 (5), 2003, pp. 879–903.
- [57] T. Powell, A. Dent-Micallef, Information technology as competitive advantage: the role of human, business, and technology resources, *Strateg. Manag. J.* 18 (5), 1997, pp. 375–405.
- [58] M. Reimann, O. Schilke, J.S. Thomas, Customer relationship management and firm performance: the mediating role of business strategy, *J. Acad. Market. Sci.* 38, 2010, pp. 326–346.
- [59] W. Reinartz, M. Krafft, W.D. Hoyer, The CRM process: its measurement and impact on performance, *J. Market. Res.* 41 (3), 2004, pp. 293–313.
- [60] K.A. Richards, E. Jones, Customer relationship management: finding value drivers, *Ind. Market. Manag.* 37 (2), 2008, pp. 120–130.
- [61] D. Rigby, F. Reichheld, P. Scheffer, Avoid the four perils of CRM, *Harv. Bus. Rev.* 80 (2), 2002, pp. 101–109.
- [62] M.L. Roberts, R.R. Liu, K. Hazard, Strategy, technology and organizational alignment: key components of CRM success, *J. Database Market. Customer Strateg. Manag.* 12 (4), 2005, pp. 315–326.
- [63] A. Saini, R. Grewal, J. Johnson, Putting market-facing technology to work: organizational drivers of CRM performance, *Market. Lett.* 21 (4), 2010, pp. 365–383.
- [64] H. Salojärvi, L.M. Sainio, A. Tarkiainen, Organizational factors enhancing customer knowledge utilization in the management of key account relationships, *Ind. Market. Manag.* 39 (8), 2010, pp. 1395–1402.
- [65] R. Santhanam, E. Hartono, Issues in linking information technology capability to firm performance, *MIS Q.* 27 (1), 2003, pp. 125–153.
- [66] S.S.C. Shang, S.F. Lin, People-driven processes in customer relationship management, *Serv. Ind. J.* 30 (14), 2010, pp. 2441–2456.
- [67] S.M. Shortell, E.J. Zajac, Perceptual and archival measures of miles and snow's strategic types: a comprehensive assessment of reliability and validity, *Acad. Manag. J.* 33 (4), 1990, pp. 817–832.
- [68] P. Shum, L. Bove, S. Auh, Employees' affective commitment to change. The key to successful CRM implementation, *Eur. J. Market.* 42 (11/12), 2008, pp. 1346–1371.
- [69] M. Sigala, Customer relationship management in hotel operations: managerial and operational implications, *IJHM* 24 (3), 2005, pp. 391–413.
- [70] L.Y.M. Sin, A.C.B. Tse, F.H.K. Yim, CRM conceptualization and scale development, *Eur. J. Market.* 39 (11/12), 2005, pp. 1264–1290.
- [71] P.E. Spector, Method variance in organizational research: truth or urban legend? *Organ. Res. Methods* 9 (2), 2006, pp. 221–232.
- [72] N. Suntornpithug, G.M. Karaatli, J.N. Khamalah, Investigating relationships between organizational commitment, employee empowerment, customer intelligence and Customer Relationship Performance among small service firms, *Int. J. Serv. Technol. Manag.* 14 (1), 2010, pp. 77–91.
- [73] Turespaña, Guía Oficial de Hoteles de España 2010, Secretaría de Estado de Turismo y Comercio, Turespaña, Madrid, 2010.
- [74] L. Vassie, J.M. Tomàs, A. Oliver, Health and safety management in UK and Spanish SMEs: a comparative study, *J. Safety Res.* 31 (1), 2000, pp. 35–43.
- [75] M. Wade, J. Hulland, Review: the resource-based view and information systems research: review, extensions and suggestions for future research, *MIS Q.* 28 (1), 2004, pp. 107–142.
- [76] Y. Wang, H. Feng, Customer relationship management capabilities: measurement, antecedents and consequences, *Manag. Decis.* 50 (1), 2012, pp. 115–129.
- [77] J.D. Westphal, J.W. Fredrickson, Who directs strategic change? Director experience, the selection of new CEOs, and change in corporate strategy *Strateg. Manag. J.* 22 (12), 2001, pp. 1113–1137.
- [78] World Tourism Organization, *Tourism Highlights, 2013 2013 Edition*, <http://mkt.unwto.org/en/publication/unwto-tourism-highlights-2013-edition>.
- [79] W. Wu, Customer Relationship Management: Technology, Market Orientation and Organizational Performance, (Doctoral thesis), Concordia University, Canada, 2002.
- [80] A.R. Zablah, D.N. Bellenger, W.J. Johnston, An evaluation of divergent perspectives on customer relationship management: towards a common understanding of an emerging phenomenon, *Ind. Market. Manag.* 33 (6), 2004, pp. 475–489.



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