The roles of Customer data and Customer Information Processing in Enhancing the Performance of Customer Relationship Management (CRM) in Hotel Industry

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ABSTRACT

Background: The last decade has seen the emergence of Customer Relationship Management (CRM) as a technique to underpin organizational performance improvement in improving customer retention, customer satisfaction and customer value. However, despite many studies conducted on customer relationship management in various industries in the past 20 years, there is still significant disagreement about its definition and meaning, and the framework for the effective implementation and evaluation of customer relationship management practice. Moreover, there is a lack of systematic empirical evidence regarding the success factors for the CRM performance.

Objective: To address these issues, this study examines the influence of customer data quality and effectiveness of customer information processing on customer relationship management performance. Results: In this quantitative study, a total of 133 Jordanian hotels participated in this study by voluntarily completing the survey questionnaire, constituting an overall 66% response rate. From the analysis undertaken, it was found that customer data quality and effectiveness of customer information processing significantly influence customer relationship management performance. Conclusion: The results suggest that hotels should have processes to maintain, analyze, and integrate customer information. Theoretical and managerial implications of these findings are discussed.

INTRODUCTION

As part of the hospitality industry, hotels have strong value for customer relationship as customers determine their survival and profitability. Hence, handling and dealing with customers is crucial in the hotel industry especially in a competitive environment where hotels have to maintain and improve current market share. The dynamism of the business environment has led hotel providers to undertake initiatives for identifying, developing and retaining high-value customers. These activities can be treated under the overall banner of customer relationship management (CRM) (Ibrahim and Ahmad, 2010). Customer Relationship Management (CRM) consists of the applications of customer information for building customer relationships (Jaakkola et al., 2009). Specifically, CRM deals with the challenge of managing information about past customers for effective integration with frontline guest services programs (Rahimi, 2008). The hotel industry enjoyed easy access to necessary data for understanding customers since guests are needed to register with their names and addresses, and in many countries, even with more detailed private information during check-in. With an advantage, people are also very likely to share personal preferences with hotel staffs to make their stay more enjoyable. However, there is a lack of transparency, quality, and analysis of these data in this industry (Adam et al., 2010). To overcome this limitation, proper utilization of information technology (IT) is necessary to ensure that guests have unique experiences during their stay in comparison to other competitors, establish close customer relationship, and meet customer needs (Luck and Lancaster, 2003). With effective adoption of IT in the hospitality industry, successful CRM strategies can be implemented as hotels can focus on functions like seeking, gathering, storing, validating, and sharing the right information throughout the entire organization with the aim of enhancing profitability and customer loyalty (Sigala, 2005). This is done through continuous refinement of insights into customer needs, habits, and economics. In the hotel industry, customer relationship management (CRM) becomes a strategic imperative for attracting and increasing guests’ patronage (Sigala, 2005). However, very often, the collection and utilization of customer data and customer information processing...
are frequently intermittent, delayed, and fragmented (Minghetti, 2003; Noone et al., 2003; Sigala, 2005). Therefore, this paper examines the roles of customer data quality and effectiveness of customer information processing on CRM performance.

**Literature Review:**

CRM is considered to be one of the most well-known management strategies of the past decades. The rise of the relationship marketing orientations is where CRM stemmed out from, and these orientations owe themselves to growing competition, globalization, advancements in information technology, system-selling approach and TQM (Total Quality Management) (Yim et al., 2004). Kim et al. (2004) define CRM performance as the amount of improvement that companies achieve in terms of customer relationship strength, sales effectiveness, and marketing efficiency achieved in the implementation of CRM technology. Information systems become strategic to the success of many companies and they have a high dependence on CRM importance. The success and failure of the company can hinge on the success of the CRM performance. It therefore becomes critical to the success of the CRM systems. If CRM and corporate management can better understand customer needs underlying CRM performance, they can better prepare the CRM strategies. However, only a few researches have been conducted to measure the performance of CRM in organizations.

Many researchers (e.g., Keramati et al., 2010; Rigby et al., 2002) discuss that a sole CRM technology will not guarantee a successful CRM initiative. But some researchers emphasize with technology choice as an important aspect of satisfying the business needs for CRM (Kotorov, 2003). Reinartz et al. (2004) reiterates technology’s important role in CRM implementation success. In the same lines, Liu (2007) discusses that after the establishment of customer strategy and the alignment of the organization to the strategy, there is a necessity to provide the suitable technology and tools to the organization. Kim et al. (2003) argued that the success of the CRM depends on how well the information technology (IT) is implemented. Wells et al. (1999) noted, “both (marketing and IT) need to work together with a high level of coordination to produce a seamless process of interaction”. Winer (2001) states that basic CRM elements are: information of customer activity, an analysis of the database that supports specific customer choice criteria, instruments for targeting particular customers, processes for relation building with customers, processes for guaranteeing customer privacy and metrics for measuring CRM programs’ success (Chang and Ku, 2009).

There is a debate on the effect of CRM technology on CRM performance (Wahab et al., 2009). On one hand, there are studies (e.g., Desai et al., 2007; Kim et al., 2010; Reinartz et al., 2004) that support non-significant effects of technology factors on CRM performance. On the other hand, there are studies (Capacity, 2004; Jayachandran et al., 2005; Wahab et al., 2009) that assert positive effects of technology factors in affecting CRM performance. Apparently, many studies considering the relationship between technology factors and CRM performance is very few. Moreover, such studies produced inconsistent results. This implies the requirement for more research to work on the establishment of the relationship between roles of technology factors underpinning CRM performance. This research need is essentially pronounced by the scholars (e.g., Desai et al., 2007; Greve & Albers, 2006). Therefore, this study considers technological factors such as customer data quality and effectiveness of customer information processing as potential antecedents of CRM performance.

**Customer Data Quality:**

According to Abbott et al. (2001b), clean customer data leads to effective and efficient CRM strategies but not all companies is investing in improving data quality. Researchers consider customer data as the lifeblood of CRM (e.g., Radcliffe, Collins and Kirkby, 2001). As CRM depends on the customer's profile and transaction history, collection of customer data is necessary for the company (Park and Kim, 2003).

Creation of a database, as suggested by Winer (2001), is the logical starting point for a CRM program. In order to store, collect, and leverage information on individual consumers, it is databases that serve as a repository (Stringfellow et al., 2004). A customer data repository and software can support the front-office or customer interaction solutions, which in turn, will help integrating and analyzing the data (Jaychandran et al., 2005). Simply collecting data for future retrieval is not enough for better customer relationship (Park & Kim, 2003). The requirement of a lot of work to enhance data quality and the basic data infrastructure for successful CRM initiatives are further argued by Goodhue et al. (2002) and Swift (2002). The role of data quality in supporting specific CRM goals is emphasized by Roberts et al. (2005), among others. According to Bose and Chong (2003), more effective CRM strategies need good quality data, despite the lack of investment in improving the quality of their data by many.

Many researchers (e.g., Abbott et al., 2001a; Desai et al., 2007; Jaychandran et al., 2005; Goodhue et al., 2002; Ryals & Payne, 2001; Swift, 2002; Winer, 2001) provided evidence for data analysis and quality to be important to CRM initiatives. The proactive use of customer data for improving customer relationships is crucial which is opposed to simply collecting data for future retrieval (Goodhue et al., 2001). Today most businesses are overwhelmed with information and CRM ultimately focuses on effectively turning information into...
Effectiveness of Customer Information Processing:

Customer-information processing is defined as relational information processing, which encompasses the particular routines used by the firm for the customer information management in order to set up customer long-term relations (Jayachandran et al., 2005). Customer information can be used for direct marketing strategies and managerial decisions, for solving operational problems, for customizing offerings, for understanding general market trends, and for enhancing relationships with the customers (Sohrabi et al., 2010; Xu et al., 2002). According to Jayachandran et al. (2005), for sustaining customer relationships, it is imperative for firms to get their hands on customer information which is consistent with the relationship management strategy. Effective customer-information processing is particularly essential in hospitality industry because hospitality organizations have to deal with the constantly changing environment owing to technological developments as well as the increasingly knowledgeable customers. Due to the internet and data base technologies' potential to assist in collecting comprehensive information on customers' needs, preferences, and behaviors, the effective customer information processing has become an emerging challenge for the firms (Kim, 2008).

The effective processing of relevant customer data in a timely manner improves the quality of customer information (Kim, 2008). Thus, the link between customer information effectiveness and performance can provide good insight on the potential influence of customer information processing on CRM performance. Kim et al. (2004) found that active retailers managing customer information and using them in their marketing efforts had strong impact on their CRM performance improvement. They also found perception from the retailers to support the importance of customer information to significantly impact the intensity of CRM implementation. The impact of customer information is also evident to improve the manufacturer-retailer relationship quality. Kim (2008) noted that firms can be assisted in identifying their most significant customers to increase their business value through the enrichment of customer information coupled with a suitably designed database. The results of the study also indicated that firms should employ process for the purpose of maintaining, analyzing and integrating customer information.

Another study by Day and Bulte (2003) found superior customer information to have significant positive relationship with relative sales, profitability, customer retention performance, and relational advantage. Furthermore, customer information can be utilized to drive marketing strategies in making managerial decisions in order to solve operational problems, to suitably fit offerings to customer's needs, to comprehend general market trends, and to improve customer relationships (Moorman, 1995). For sustainable customer relationships, it is necessary for firms to disseminate the crucial customer information compatible to the philosophy of relationship management (Jayachandran et al., 2005). Although there is a marked increase in the studies regarding the value of customer information, (Zahay, 2005), however, to what extend does effectiveness in customer information processing results in excellent CRM performance has not been studied thoroughly. Effectiveness in customer-information processing is indeed very important to the hospitality industry as this type of industry generally has to contend with the ever changing environment owing to technological developments the necessity to deal with well informed customers.

Based on the theoretical underpinning and these empirical evidences, it can be concluded that customer data and customer information processing are necessary condition for CRM performance. The empirical evidences from different other contexts also lead us to expect a positive influence of customer data quality and effectiveness of customer information processing on the CRM performance. Therefore, we hypothesize that:

H1: Customer data quality is positively related to CRM performance.
H2: Effectiveness of customer information processing is positively related to CRM performance.

Methodology:

This study was cross-sectional in nature where data were collected once to answer the study’s research questions (Sekaran, 2010). Data were collected through personal survey using questionnaire. The population of this study comprises hotels of various ratings located in Jordan. The reason for choosing the hotel industry was that CRM is extremely important in the tourism sector, particularly in hotels owing to the importance of customer relations involved. To collect the data, 200 questionnaires were distributed to hotels in Jordan. Out of these, 141 were returned of which 10 were excluded because they were incomplete. Thus, a total of 131 completed questionnaires were used for empirical analysis, giving a response rate of 66 percent.

CRM performance is conceptualized as a four-dimensional construct: key customer focus, CRM organization, knowledge management, and technology-based CRM. Customer data quality is operationalized as the degree of accessibility of customer data, accuracy of data, cost of acquiring customer data and the usefulness of customer data (Bose & Chong, 2003). Effectiveness of customer-information processing is operationalized by
four dimensions, that is effectiveness in acquisition, generation, analysis, interpretation, and storage of customer information. CRM performance was measured by 14 items adapted from Sin et al. (2005). Customer data quality was measured by eight items developed from Bose and Chon (2003) study. Eight items relating to effective of customer-information processing were used to measure the extent to which hotel firms were involved in customer information processing activities and behaviors. The measurement scales were adapted from the study of Kim (2008). Responses to the questionnaire items were elicited on five-point scales ranging from “5=strongly agree” to “1=strongly disagree”. Item relating to a particular construct were summed to create overall composite scores for each respondents. Table 1 shows the means, standard deviations and reliability coefficient of each construct.

Table 1: Descriptive Statistics for Dimensions of Variables.

<table>
<thead>
<tr>
<th>Dimension (Variables)</th>
<th>Mean value</th>
<th>Standard Deviation</th>
<th>α (reliability coefficient)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRM performance</td>
<td>3.71</td>
<td>.36</td>
<td>.72</td>
</tr>
<tr>
<td>Customer data quality</td>
<td>3.64</td>
<td>.56</td>
<td>.77</td>
</tr>
<tr>
<td>Effectiveness of customer information processing</td>
<td>3.50</td>
<td>.59</td>
<td>.83</td>
</tr>
</tbody>
</table>

Analysis:

Regarding the background information of the responding hotels, it was found that the majority of the participating hotels (41.9%) reported an annual income in the range of USD$ 40,000. In terms of the number of hotel employees, it was found that the majority of the participating hotels (51%) reported to employ between 20 and 100 employees. With regard to the number of years in operation, it was found that slightly more than one-third of the participating hotels (36%) were in operation for 11-20 years. With respect to hotel categories, 30.5% were one-star hotels, 29% two-star hotels, 24.5% belonged to the three-star category, 8.5% to the five-star category while 7.5% to the four-star category. Table 2 provides a summary of the correlation analysis results. The stated hypotheses regarding the influence of customer data and customer information processing were tested using regression. Prior performing the actual hypotheses tests, correlations between the constructs were derived. Table 2 shows the correlation structure of the data used in this study. As shown in table 2, positive correlations exist between CRM performance and customer data quality (r = .38; p < .01) as well as with CRM performance and effectiveness of customer information processing (r = .36; p < .01).

The individual hypothesis was then tested using a regression prediction model (Hair et al., 1998) with CRM performance as the dependent variable. Results from the analysis are summarized in table 3. As shown in table 3, customer data quality was positively related to CRM performance (β= .57; p < .01) as well as the positive relationship found between effectiveness of customer information processing and CRM performance (β = .14; p< .01). Therefore, both hypotheses were supported.

Table 2: Pearson Correlation.

<table>
<thead>
<tr>
<th>CRM Performance</th>
<th>Customer Data Quality</th>
<th>Effectiveness of Customer Information Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRM Performance</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Customer Data Quality</td>
<td>.38(***)</td>
<td>1.0</td>
</tr>
<tr>
<td>Effectiveness of Customer Information Processing</td>
<td>.36(****)</td>
<td>.54(****)</td>
</tr>
</tbody>
</table>

**Correlation is significant at 0.01 level (2 tailed)

Table 3: Regression Analysis.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Coefficient (β)</th>
<th>B</th>
<th>SEB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable: CRM Performance</td>
<td>Customer data</td>
<td>.57**</td>
<td>.31</td>
</tr>
<tr>
<td>Customer information processing</td>
<td>.14**</td>
<td>.04</td>
<td>.06</td>
</tr>
</tbody>
</table>

Discussion:

In the present study, significant relationships between customer data quality and customer relationship management performance were established. In other words, the quality of customer data could predict continuous improvement of customer relationship management performance in hotels. This finding supports past studies such as those done by Becker et al. (2009) who investigated the relationship between the storage and accessibility of customer data and CRM performance. Likewise, in another study, Alshawi et al. (2011) found data quality to be related to CRM adoption in 30 SMEs in the UK. Moreover, Minamia and Dawson (2008) also found a significant relationship between using a good quality of customer data and customer relationship management performance in Japan.

CRM is often normally considered as a technology-focused database management approach, which gathers and analyzes information with the goal to achieve customer satisfaction (John et al., 2005; Haug & Arlbjorn,
Therefore, the importance of quality customer data as one of the predicted factors for customer relationship management is fully validated by the Jordanian hotel industry. Based on these findings, it can be argued that the success of CRM performance requires the existence of quality data to identify the main market segments and create an accurate customer profile in the hotel industry.

This study found a significant relationship between effectiveness of customer-information processing and customer relationship management performance. Processing customer information in an effective manner can help hotels monitor emerging and changing customer needs toward high CRM performance. This finding supports past studies such as those done by Kim (2008) who investigated the relationship between customer-information processing and CRM performance in American restaurants. Another study by Day and Bulte (2003) found superior customer information to have a significant positive relationship with relative sales, profitability, customer retention performance, and relational advantage. The survey by Roh et al. (2005) on life insurance firms in Korea found that effectiveness of customer information processing positively improves the performance of CRM. Therefore, the importance of effective customer information processing as one of the predicted factors for customer relationship management is justified.

The results suggest that hotels should have processes to maintain, analyze, and integrate customer information. However, in reality, many hotels tend to have customer information that is often fragmentary, incomplete, and/or inadequate; resulting in loss of revenue opportunities due to inaccurate interpretations of customer needs (Kim, 2008). Effectiveness of customer-information processing can help hotels thoroughly assess the quality of their existing and new customer information. Consequently, enriching customer information with a carefully designed customer database can help firms identify their most profitable customers and increase their business value. Generally speaking, CRM focuses on turning customer information into intelligent business knowledge to manage customer relationships more effectively. This information will help the organizations to access the historical data of their customers and in turn will identify the main market segments and create an accurate customer profile.

Conclusion:
This study has provided an innovative step on the prediction of success factors of customer relationship management performance in the context of hotel industry. The research framework investigated technology-related factors as the predictors for customer relationship management performance in hotel industry. Therefore, future research should consider other technological factors that could influence customer relationship management performance. Our study was conducted in the hotel industry only. This implies that the generalizibility of this study’s findings is limited to the hotel industry and may not be applicable to other markets without further validation.

REFERENCES


