

# The Effect of Customer Relationship Management System Adoption and Perception on Organization Performance: Study of Jordanian Hospital Sectors

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## Abstract

The Customer Relation Management System (CRMS) has considerable interest in recent years. The past research on the relationship between CRMS adoption and CRMS perception on the organization performance has largely been based on international data, this paper reviews the relationship between the CRMS perception, CRMS adoption and organization performance for the Jordanian hospitals using the partial least squares equation modeling as the approach to examine the model. Furthermore this paper found a significant relationship between CRMS adoption and organization performance, and CRMS adoption with CRMS perception.

**Keywords:** CRMS, orgnization performance, adoption, perception, hospitals

## 1. Introduction

In order to reduce the technological gap between developing and developed countries, many of the former (including Jordan) have launched several initiatives, such as CRMS (Siau & Long, 2006). Nonetheless, Alsmadi and Alnawas (2011) pointed out that past studies discovered organizations in Asian countries, like Jordan, were adopting CRM approach at slower pace compared to their Western counterparts. This occurred due to the lack of more sophisticated techniques, applications and qualified manpower. The adoption of CRMS is becoming an important trend in the healthcare industry; hospitals need to provide quality CRMS to their customers in order to build a positive public image (Hung, S.-Y., Hung, W.-H., Tsai, C.-A., & Jiang, S.-C., 2010). Therefore, it is important to focus on CRMS adoption in Middle East to enhance organizational performance and enable developing countries to keep pace with the developed countries. Hence, this study intends to look specifically into the adoption of CRMS in the healthcare industry in Jordan.

However, existing studies on the perception of organizations on CRMS are still very limited and not well-researched (Kumar & Srivastava, 2011). Additionally, studies on the adoption of CRMS by developing countries remain scarce because the CRMS concept is still at its infancy stage, especially in Jordan (Alsmadi and Alnawas, 2011). Only limited academic studies have been carried out on CRM in Jordan. For example, investigated the impact of CRMS on customers' satisfaction of the banking industry in Jordan. Alsmadi et al., (2011) attempted to develop a CRM model and empirically test its underlying compositions in the banking and financial sector in Jordan. Harb and Abu-Shanab (2008) showed how Zain (a telecommunications company in Jordan) moved toward CRM implementation and provided features that addressed customers' needs to improve their loyalty and maintain better relationships with them in Jordan. Wahab, Al-Momani and Noor (2010) investigated the ease of use and e-service quality as antecedents of electronic CRM performance in the mobile phone services industry. Hence, related studies on CRM have focused on the banking sector, telecommunications sector, and mobile phone services sector in Jordan. Further, previous studies focused on the individual-level sectors, such as customer satisfaction and loyalty; and failed to address the issues pertaining to organizational-level sectors. As such, there is a need to widen the study of the CRM adoption in other sectors in Jordan, such as the healthcare sector, with a special focus on the organizational-level services.

## 2. Literature Review

### 2.1 Customer Services Process in Hospitals

The setting in which healthcare management operates is shaped by the rapid pricing competition, influx of technological development and the constantly-changing guidelines and standards, as well as the dependence of professionals on each other to give quality services (Torres & Guo, 2004). Furthermore, healthcare organizations are faced with major pressures and a variety of obstacles, such as the expanded access to healthcare, the growing aging population, technological advancements and the rising cost of healthcare equipment and services (Wijewickrame & Takakuwa, 2005).

As a matter of fact, there appears to be an intensive competition among modern hospitals and clinics in the domestic and global markets (Bosire, Shengyong, Gandhi, & Srihari, 2007). Additionally, hospitals have dense and complex systems, where most of its components are closely linked and they can only interact with each other to galvanize the performance of the hospital (Gunal & Pidd, 2005).

Customers refer to those who make the purchasing decision and the payment for the products and services. With regard to the healthcare industry, there are six types of customers: (1) patients; (2) employers; (3) third party payers; (4) doctors or other decision-making staff; (5) government; and (6) observers (potential future patients), such as family members and friends (Lim, Tang, & Jackson, 1999).

### 2.2 Organization Performance and Adoption

The fundamental focus of organizations includes increased market share and bigger profits (Rust, Zahorik, & Keiningham, 1996). Utilizing the appropriate marketing tools might give a competitive advantage by facilitating product and service difference, in addition to making limitations towards changing to other products and services. This has made CRM the focus of much attention in recent years.

From the demand side, hospitals adopt CRM aiming to enhance their performance, get strategic advantages, and offer visibility to the work procedures. According to Lin and Lin (2008), organizations progressively endeavour to enhance their performance by using technologies, which facilitate and improve information sharing, dealings, enhance customer service, and reinforce coordination with business associates.

*H1: The adoption of CRMS positively influences organization performance in Jordanian hospitals.*

### 2.3 Perception Adoption and Implementation of CRMS.

Kumar and Srivastava (2011) investigated the understanding of the CRMS in private hospitals in the northern part of India, where it was found that the perception of CRMS by organizations is still vague and unclear. There also appears to be few studies related to CRMS perception with members of organizations. Furthermore, the organizational efficiency in adopting and implementing CRMS initiatives can only happen when there is an understanding on the way organization members observe CRMS.

Reinartz, Thomas, and Kumar (2005) who studied the Balancing Acquisition and Retention Resources to Maximize Customer Profitability, proposed the idea that a better understanding of the value of the customer should result in changing the way customers are managed.

Based on the study by Ko, Kim, Kim and Woo (2008), the organizational characteristics and the CRM adoption process that aim to identify the status of CRM adoption and search through the influence of organizational characteristics on the CRM adoption process in the Korean fashion industry, distinguished that the perception of CRM significantly influences the CRM adoption decision, and CRM adoption affects the implementation degree of CRM technologies.

*H2: The perception of CRMS positively influences organization performance in Jordanian hospitals.*

*H3: The adoption of CRMS positively influences CRM perception in Jordanian hospitals.*

## 3. Research Method

A questionnaire survey was carried out to collect the view of top management in Jordanian hospital. As the purpose of the study is to examine the effect CRM adoption, CRM perception and organization performance in the Jordanian hospital, our target population comprised all of the hospital using CRMS in Jordan. A total of 144 respondents were selected as our respondents, with 103 respondents fully participating in the study. The questionnaires were conveniently distributed to top management in city in Jordan including Irbid and Amman using stratified systematic sampling technique to ensure that the sample represents the population. Roscoe (1974) recommended that sample sizes larger than 30 and less than 500 are appropriate for most studies. The obtained data were analyzed using the SPSS software version 17.0 and Partial Least Squares (PLS).

## 4. Results and Discussion

### 4.1 Convergent Validity and Reliability

Convergent validity is the term used when researchers intend to measure the degree to which a set of items converge consistently to measure a particular concept. Three criteria are used to measure convergent validity. These criteria, according to Hair et al. (2010), are factor loadings, composite reliability (CR) and average variance extracted (AVE). Using the factor loading, researchers examined the items' factor loadings and cross loadings, checking if there are problems related to some items. The values to look for, as suggested by (Hair et al., 2010), is the loading that is not below 0.7, and will be assessed as items with acceptable loadings. As exhibited in Table 1, all the items' loading exceeded the recommended value of 0.7 (Hair et al., 2010). Table 1 confirmed that all the items highly loaded on their respective factors in relation to their loadings on other factors. In the reliability assessment process, there is need to examine the extent to which a set of items indicates consistency in measuring the associated latent construct (Hair et al., 2010). This is referred to as composite reliability which is an important aspect of convergent validity. When examining the composite reliability, the 0.70 threshold and the average variance extracted are applied to measure them.

A look at Table 1, also shows that the values of the composite reliability ranged from 0.829 to 0.875 which exceeds the recommended value of 0.7 thus indicating adequate convergent validity (Fornell & Larcker, 1981; Hair et al., 2010). Also, the average variance extracted (AVE), from among the set of items, was examined. The value of AVE is that it is used as a means of comparing the variance captured by the indicators used in measuring the construct while the other variance are attributable to the measurement errors. Following the suggestion of Barclay et al. (1995), any values of AVE that is higher than 0.5 is an indication that the set of items have adequate convergence to measure the construct under study. Looking at the results in Table 2, the values of average variances extracted (AVE) of all the constructs range between 0.619 and 0.636. Since these values are above the recommended value of 0.50, it is concluded that the measures used have an adequate level of convergent validity.

Table 1. Results of measurement model

	AVE	C.R	Cronbachs Alpha
Adoption	0.619607	0.829950	0.707668
Perception	0.636910	0.875121	0.809849
Organization performance	0.625633	0.833419	0.724850

### 4.2 Discriminant Validity

The process of validity in research continues with the examination of the discriminant validity of the measures. For clarity, what is referred to as discriminant validity is the process of ascertaining the degree to which items can differentiate among constructs. In other words, discriminant validity measurement ensures that the items measuring constructs don't overlap. It is a measure of how a particular construct shares higher variance with its own items than other constructs' items (Compeau et al., 1999). The method also used in measuring the discriminant validity of the measures is the one suggested by Fornell and Larcker (1981). In this method, the square root of average variance extracted (AVE) should be higher than the cross correlation among constructs. The diagonal elements as contained in Table 2, are the square root of the AVE for each construct. As illustrated in the table, each is higher than the cross correlation between that construct and other constructs. Therefore, the results demonstrated adequate discriminant validity. From the convergent validity and construct validity analysis, the construct validity of the measure can be concluded.

Table 2. Results of discriminant validity of constructs

Variable	Adoption	Perception	Organization performance
Adoption	0.619		
Perception	0.381117	0.636	
Organization performance	0.187078	-0.095360	0.625

## 5. Testing the Research Model

The results of the study showed that CRM adoption have a positive significant effect on organization

performance adoption with indicators ( $B = 0.261$ ,  $t\text{-value}=1.989$ ,  $p < 0.01$ ), and CRM adoption have a positive significant effect on CRM perception with indicators ( $B = 0.381$ ,  $t\text{-value}=4.457$ ,  $p < 0.001$ ). Furthermore, CRM adoption have a low positive significant effect on organization performance with indicators and ( $B = -0.195$ ,  $t\text{-value}=1.458$ ,  $p > 0.001$ ). These results indicated that H1, H3 were supported and H2 not supported by the results of the study.

These results, confirm the importance of these three variables in explaining the variance in Jordanian Hospitals performance. Table 3, Figure 1 and Figure 2; however, summarize the results related to the hypotheses of the study.

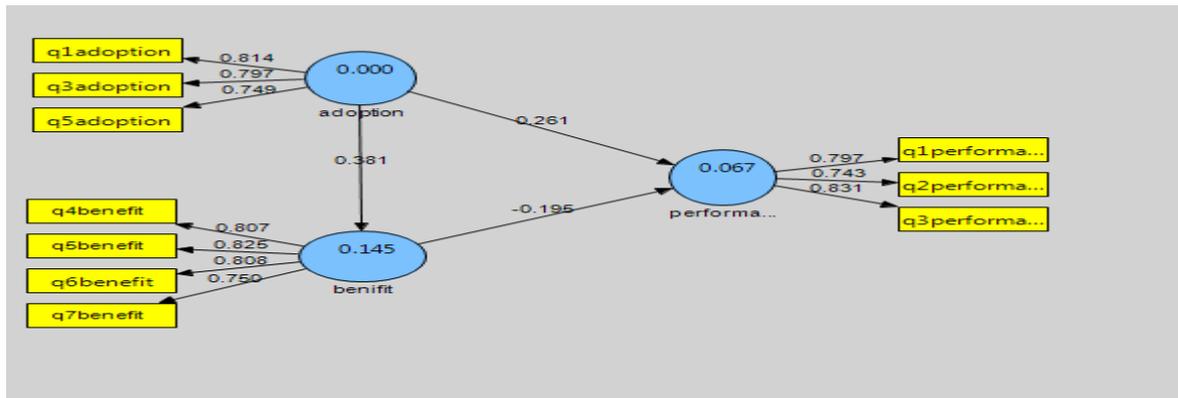


Figure 1. Path analysis results

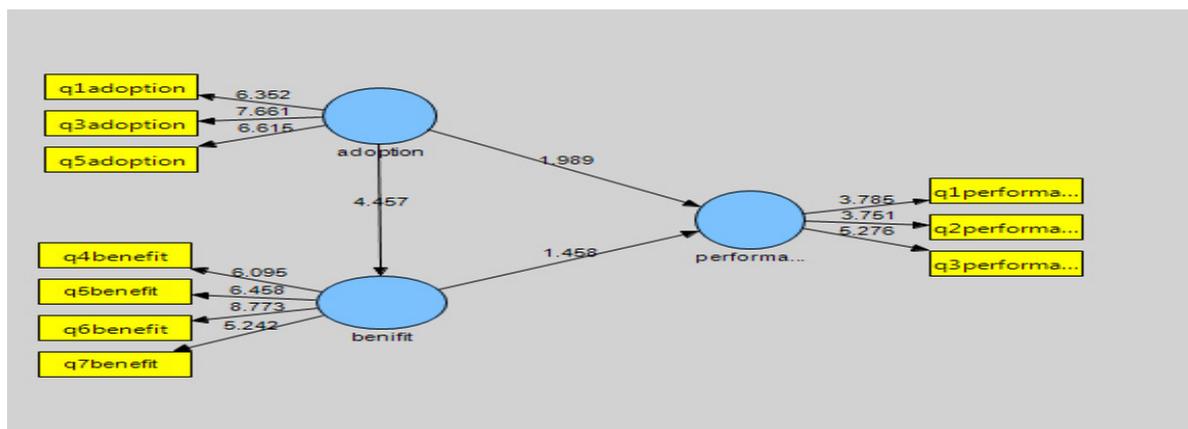


Figure 2. T-Values for the path analysis results

Table 3. Path coefficients and hypothesis testing

Hypothesis	From	To	Path Coefficient	T-value	Decision
H1	Adoption	Organization performance	0.261	1.989	Supported
H2	Perception	Organization performance	-0.195	1.458	Not sSupported
H3	Adoption	Perception	0.381	4.457	Supported

The outcome of this study demonstrates consistency with that of the research by Alawneh and Hattab (2009). The result of their study highlighted the impact of e-business adoption on banking performance from the view of sales-services-marketing, internal operations and coordination and communication. The study proved that the derivable benefits includes improved communications, attractive marketing strategy, competitive placement, developed services and quality supply.

Young, (2007) in his study affirmed that in a healthcare organization, the adoption of CRMS is aimed at and applied to optimize profits and to improve patients' health, relationships, and loyalty (Benz & Paddison, 2004).

Furthermore, CRMS is seen as means of dispensing a bigger ROI to healthcare operating organizations as it appears to be the perfect solution to the predicaments faced by the healthcare industry (Wettemann, 2007). The author argues that if an health organisation have poor relationship with customers this may lead to more serious consequences for the healthcare industry than can be imagined for other industries (Alexandera, 2005). It is this realisation that makes it imperative for a health organisation to create understanding and awareness of the benefits of CRMS as a pre condition for executing a successful and thorough implementation of CRMS.

## 6. Opportunities for Further Research

The outcome of this study showed interesting and meaningful results but there are other areas of improvement and further research. The limitations also need to be discussed. The first important findings of this study is the fact that CRMS adoption can play a key role in developing marketing assets. Such asset has potential to lead to better performance. In the context of managing customer value, such marketing asset deserves due consideration by firms that are trying to achieve better performance.

However, future research needs to focus certain variables that can serve to moderate the effects of the relationship between CRMS and organizational performance relationship. Among the variables that may be considered include external factors (environmental turbulence) as well as internal ones (such as organisational culture or company size). The present study has focused only on hospital sectors in two regions of Amman and Irbid in Jordan. Other sectors need to be considered. These sector are the hotels and companies' that were excluded from this study. Anothe factor that may influence the result is the company size. Large companies, with larger resources available, may be more inclined towards CRMS adoption processes and technologies, while smaller companies may find this too expensive. In this present study the available sample is too small that it could not allow controlling for hospital and company size. These issues, however, open some directions for future research. Research at industry level might reveal the differences across industries in the intensity of the effects we studied.

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