AN EMPIRICAL EXAMINATION OF CUSTOMER RELATIONSHIP MANAGEMENT (CRM) IMPLEMENTATION IN ISLAMIC BANKS

Prof. Dr. Tarek Taha Ahmed
Dean of the Faculty, Pharos University in Alexandria
EGYPT

ABSTRACT

Despite, customer relationship management (CRM) has recently gained wide attention in business and service literature and become of pivotal importance to many organizations as the key to profitability, through building and maintaining sustainable relationships with profitable customers; few works investigated this phenomenon empirically in the Islamic banking context. In responding to this call, the current study aimed to fill the existing research gap in literature and contribute to the accumulative knowledge by: (1) empirically examining CRM implementation in Islamic banks. (2) measuring its effects on enhancing bank customer-based profit performance, (3) assessing the mediating role of CRM readiness in the relationship between CRM implementation and bank customer-based profit performance; (4) developing and validating a structural equation model for predicting the Islamic banks' customer-based profit performance; and (5) determining the extent to which CRM is actually applied in Islamic Banks. A multi-stage research methodology was utilized, combining quantitative and qualitative methodologies to validate the research model and empirically test the hypothesized relationships. The research design involved a cross-sectional national sample survey for data collection during April to June 2015 (n=368). The reliability analysis was taken for each construct and the results showed that the value of Cronbach’s alpha of every construct is significantly higher than the reliability acceptable level (ranging from 0.81 to 0.94). Also exploratory factor analysis was used to evaluate the construct validity and the results demonstrate acceptable standard. The evidence of a good fit, reliability and validity indicated that the measurement model deemed appropriate for testing the structural model that demonstrated highly explanatory power. The results indicated that strengthen the completeness of CRM can establish lifetime value based on sustainable relationship and in turn enhance Islamic bank competitive capabilities and customer-based profit performance. The results can also help practitioners and Islamic Banks to develop more customized CRM practices.

Keywords: CRM Readiness, Customer Relationship Management (CRM), Customer-based profit performance, Developing Countries, Islamic Banks.

INTRODUCTION

In today's business environment, which characterized by financial challenges and increasing competitiveness particularly in service market, where business strive for competitive advantages, marketing orientation paradigm has changed from service-centered approach to a more customer-centered approach, customer relationship management (CRM) has experienced rapid growth and become one of the most controversial issues and a focal-point in both business and literature (e.g. Moreno et al., 2014; Sarmaniotis et al., 2013; Volmohammadi and Beladpas, 2014; Jamali et al., 2013; Sangle and Awasthi, 2011; Li and Mao, 2012; Awan and Bukhari, 2011; Stein et a., 2013; Josiassen et al., 2013; Tzokas et al., 2015).
Successful organizations all over the world now implement CRM to create competitive advantages, develop customer lifetime value and differentiate themselves from competitors through establishing, maintaining and enhancing close and long-term relationships with customers, which enable them to detect changes in customers' needs, predict their behavior, design the appropriate communication tools, better target profitable segments, create personalized marketing plans for each segment, identify new marketing opportunities, improve customer services and satisfaction, sustain customers retention, win back lost customers, and ultimately turning them into loyal customers (Josiassen et al., 2013; Volmohammadi and Beladpas, 2014; Mekkamol et al., 2013; Chang et al., 2014).

In this context, scholars (e.g. Sarmaniotis et al., 2013) emphasised that service providers (Islamic banks in our study) that fail to match their customers' needs and keep in track with changes in customers' preferences, put their firm's existence in danger. Therefore, every Islamic bank has to know how to enter a market and keep relationships with customers for it competitive position (e.g. Amirzadh and Shoorvarzy, 2013). Similarly, Moreno et al. (2014) considered CRM as a strategic approach for managing customer relationships to create both customer and shareholder value. On the other hand, Chang et al. (2014) argued that long-term customers can bring profit to firms and always is a paradox inherent in CRM implementation. This conclusion has been supported by other authors (e.g. Sivaraks et al., 2011) they viewed CRM as the key to profitability in an increasing dynamic market and many organizations now are implementing CRM in the hope that it will enable them to better target profitable segments and ultimately increase the organization's financial performance (Josiassen et al., 2013).

While such approach is theoretically addressed in literature the impact of CRM implementation on service firms' profit performance has not been extensively studied. More specifically prior studies rarely investigated how CRM can affect bank's performance (e.g. Sivaraks et al., 2011). Thus, there is a need for research that specifically examines the impact of implementing CRM on the Islamic banking context (e.g. Sivaraks et al., 2011; Kubina and Lendel, 2015; Josiassen et al., 2014; Santouridis and Tsachtani, 2015). In responding to this call, the current study aimed to fill the existing research gap in literature and contribute to the accumulative knowledge and by: (1) empirically examining CRM implementation in Islamic banks. (2) measuring its effects on enhancing bank customer-based profit performance, (3) assessing the mediating role of CRM readiness in the relationship between CRM implementation and bank customer-based profit performance; (4) developing and validating a structural equation model for predicting the Islamic banks' customer-based profit performance; and (5) determining the extent to which CRM is actually applied in Islamic Banks.

With these objectives in view, the current research has been organized as follows: the literature and relevant studies were reviewed and analyzed. Then a research model was proposed and hypotheses were formulated to be tested in the study. This was followed by an
explanation of the procedures used to obtain empirical data, measurement, and validation processes, as well as the testing of the hypotheses stated. Finally, based on paper’s findings a series of conclusions with practical and academic implications and final thoughts that emphasize the great interest in the topic under analysis were presented; and then certain limitations and future lines of research with regard to this issue were highlighted.

LITERATURE REVIEW AND DEVELOPING HYPOTHESES

Relevant literature, which provided the conceptual foundation and theoretical background for this paper, and past research were extensively reviewed in order to develop more effectively the study hypotheses and the proposed model. through this process it was noted that there is no universally accepted definition for customer relationship management and CRM has been defined in prominent previous research according to different aspects illustrate the evolution in the way CRM has been viewed (Sivaraks et al., 2011; Josiassen et al., 2013). For example, Chang et al (2014) viewed CRM as an important business approach to build long term, profitable relationships with specific customers. While, Khodakarami and Chan (2014) defined customer relationship management a set of methodologies and organizational processes to attract and retain customers through their increased satisfaction and loyalty. In this line, Martín et al. (2015) pointed out that when we talk about customer relationship management, we specifically refer to the business strategy that involves a systematic process to manage, initial, maintenance, and ending relationship with the customer through all windows of contact in order to maximize the value of the relationship. According to Kotler and Keller (2012) customer relationship management is the process of carefully managing detailed information about individual customers and all customers “touch points” to maximize loyalty and a customer touch point is any occasion on which a customer encounters the brand and product from actual experience to personal or mass communications to causal observation.

It is worth mentioning that heavy emphasis was put on the role of information technology when defining management relationship management, for instance, Wei et al. (2013) described customer relationship management as the adoption of information technology to develop new customers and retain old customers as to keep long-term and closed relationship, which aims to improve customer relationship and thus can help increase customer loyalty, customer retention and customer profitability. Similarly, Khodakarami and Chan (2014) viewed CRM as a group of information systems that enable organizations to contact customers and collect, store and analyze customer data to provide a comprehensive view of their customers.

Consistent with the above, other such as Santouridis and Tsachtani, (2015), and Shim et al. (2012) shed light on information technology, they indicated that customer relationship management relies heavily on gathering and processing customer data in order to extract information that will help to identify ideal customers and customize their offerings s a result of this, information technology plays a pivotal role as an enabler of successful CRM implementation. In this study, we adopted the operational concept that define customer relationship management as a business approach involves a set of methodologies and information and organizational processes to build long term and profitable relationships with customers for creating competitive advantage and achieving profit performance. Based on the previously mentioned concepts and definitions CRM implementation in service organizations involves main processes such as, developing customers profile, segmenting markets, anticipating customers' needs, customizing service offers, identifying appropriate channels to
reach customers, identify and focusing on profitable customers and assessing customers’ retention behavior (e.g. Khodakarami and Chan, 2014).

In literature, customer relationship management readiness means that organizations collaborate to CRM infrastructure, software, departments and employees in order to implement CRM relational information processes effectively. Therefore, customer relationship management readiness consists of two dimensions, (a) organizational readiness which refers to the capability of organizations to adopt information technology systems, and (b) technology readiness which includes hardware, software and computer networks that facilitate CRM processes and information exchange (Chang et al., 2014). Given that the readiness concept becomes more complicated when an organization, rather than individuals, is the focus of adoption because readiness tends to depend on a wide variety of factors (Yen et al., 2012). Following Chang et al. (2014) the current study adopted the operational concept that defined bank's profit performance as a depiction of organization efficiency using three dimension: customer-level profitability, balancing acquisition and retention of profitability, and converting unprofitable customers to profitable ones.

Drawing upon the comprehensive review of the specialized literature and based on the theoretical background discussed earlier as well as the data collected from a series of qualitative studies in the preliminary stage of our current study the following hypotheses that guide the investigation were formulated for testing their relationships:

**H1**: CRM implementation has a significant positive relationship with Islamic Banks’ customer-based profit performance:

- **H1a**: Developing customers profile positively influences Islamic Banks’ customer-based profit performance
- **H1b**: Segmenting markets positively influences Islamic Banks’ customer-based profit performance
- **H1c**: Anticipating customers’ needs positively influences Islamic Banks’ customer-based profit performance
- **H1d**: Customizing Islamic bank offers positively influences Islamic Banks’ customer-based profit performance
- **H1e**: Identifying appropriate channels to reach customers positively influences Islamic Banks’ customer-based profit performance
- **H1f**: Identify and focusing on profitable customers positively influences Islamic Banks’ customer-based profit performance
- **H1g**: Assessing customers’ retention behavior positively influences Islamic Banks’ customer-based profit performance

**H2**: CRM readiness significantly mediates the relationship between CRM implementation and Islamic Banks’ customer-based profit performance:

- **H2a**: The positive effect of CRM implementation on Islamic Banks’ profit performance is greater for banks with higher CRM organizational readiness.
- **H2b**: The positive effect of CRM implementation on Islamic Banks’ profit performance is greater for banks with higher CRM technical readiness.

**H3**: Islamic banks tend to implement the full features of customer relationship management

**CONSTRUCTING THE STRUCTURAL ANALYTIC MODEL**

In this paper, a structural research model was developed through the integration of the constructs mentioned in the previous hypotheses, which incorporated many of the relevant
features of CRM implementations identified in literature to be examined simultaneously in one framework for validation.

The strength of the hypothesized relationships embedded in the model and its robustness of predicting Islamic Banks’ customer-based profit performance were evaluated. Therefore our research model contained 10 constructs, 7 independent variables (developing customers profile, segmenting markets, anticipating customers' needs, customizing Islamic bank offers, identifying appropriate channels to reach customers, identify and focusing on profitable customers and assessing customers’ retention behavior) and 2 mediating variables (CRM organizational and technical readiness) as predictors of the criterion dependent variable Islamic Banks’ profit performance, in addition to one variable used to assess the actual implementation of CRM Islamic banks operating in Egypt.

Structural equation modeling (SEM) was adopted in our data analysis to provide efficient estimation for separate multiple regression equations estimated simultaneously where constructs could be represented by a summed scale and assess the relative importance of each construct. Thus, the initial prediction multiple regression equation (EG1) of the research model can be presented as follows:

\[
Y_{IBP} = a + b_{DCP} DCP + b_{SMK} SMK - b_{ACN} ACN + b_{CBO} CBO + b_{CHN} CHN + b_{PRC} PRC + b_{ORG} ORG + b_{TCH} TCH --------(EG1)
\]

Where:
- DCP=Developing customers profile
- SMK=Segmenting markets
- ACN=Anticipating customers' needs
- CBO=Customizing Islamic bank offers
- CHN=Identifying appropriate channels to reach customers
- PRC=Identify and focusing on profitable customers
- ACR=Assessing customers’ retention behavior
- ORG=CRM Organizational readiness
- TCH=CRM technical readiness
- \(Y_{IBP}\)= Islamic Banks’ customer-based profit performance

Overall, the evidence of a good model fit, reliability, and convergent validity indicated that the measurement model was appropriate for testing the structural research model. However, the measurement items used to operationalize these constructs were derived from previous relevant works and the wording of the items was adjusted to match the present context.

**METHODOLOGY**

A richer research methodology is used in this empirical study combining quantitative and qualitative methods to validate the research model and empirically test the hypothesized relationships among its variables. Thus, the research process involved multi-stage procedures as follow.

**Preliminary Qualitative Study**

Preliminary qualitative study data were collected by means of focus group, complemented by a series of in-depth face-to-face interviews with 10 senior bank managers who had positions of responsibility in customer relationships management implementation in their banks, to
gain deeper understanding of the phenomenon under consideration, supports hypotheses development and establishes the criteria and relationship constructs relevant to our empirical study. Issues arising from this stage were used as a basis for the subsequent quantitative study.

Quantitative Research Design

Furthermore, a quantitative research study in the form of questionnaires was conducted in two stages, first the pilot survey was administrated during February 2015 to test the questionnaire’s reliability, and second a cross-sectional national sample survey for data collection was conducted during April to June 2015. The target population was full-time CRM employees of the Islamic banks operating in the two major business cities in Egypt (Cairo and Alexandria) using simple random sampling technique to gain as many representative samples as possible and increase generalizations of the results. The list of Islamic banks in Egypt (at http://www.globalbankingandfinance.com/list-of-islamic-banks-in-egypt/) served as a sampling frame for this study. Among a total of 800 questionnaires that were randomly distributed, 368 valid responses were obtained and used in data analysis, after removing invalid answers, yielding a usable response rate of 46.00 percent for the overall survey. The respondents did not need assistance in completing the questionnaires as the information on the cover letter and instructions on how to fill the questionnaire were explicit.

Instrument, Validity and Reliability

Before the full-scale survey, the present study took steps to ensure reliability and validity. The scales used for measurement process were adapted from well-established survey items of previous works and modified to suit the purpose of the current study. Research variables were measured by multiple items, using a 7-point Likert scale ranging from 1-7. All items included in the questionnaire were cross-validated before they were added. The questionnaire was pre-tested and then followed by a pilot test to validate the instrument. In the pre-test, the respondents were asked to comment on listed items regarding the research constructs, including instrument length, questions format, the wording of scales, and other comments on how the questionnaire could be improved. The pilot test aimed to ensure that questionnaire adequately addressed the relevant issues and reducing possible ambiguity in the questions. Based on pre-test and pilot test feedback, modifications had been made to improve readability and appropriateness. The revised questionnaire was again pre-tested and the final version was found worked well and the instrument has confirmed content validity.

The Cronbach’s alpha coefficient test was used to evaluate the internal consistency reliability. The reliability analysis results exhibited an acceptable level, the value of Cronbach’s alpha of every construct is greater than 0.8 (ranging from 0.81 to 0.94). Also, exploratory factor analysis was used to evaluate the construct validity and the results demonstrate acceptable standard.

DATA ANALYSIS, MODEL TESTING AND RESULTS

The empirical data collected by the survey was analyzed and tested using statistical software packages (SPSS). The analysis included descriptive statistics, correlation to examine the relationships among variables, multiple regression analyses with its associated statistical inference tests were applied due to the presence of many predictors in the study, to test for the joint and independent influence of predictors on the criterion variable. Stepwise forward
inclusion techniques of regression analysis were performed to assess the relative importance of predictor variables mentioned earlier and to select a smaller subset of variables that account for most of the variation in the criterion variable. To determine whether any multicollinearity effects among the independent variables included in the model equations, the total correlation matrix was reviewed in-depth and the results revealed that there was no severe multicollinearity problem among the regressors, which suggested that predictors were tolerated in the criterion variable. The results of testing each of the hypotheses are given below.

The Results of Testing Hypotheses H1 and H2

The summary output of the stepwise regression analysis (forward inclusion) introduced in table 1 led to accept the following hypotheses H1a, H2a, H1b, H1e, H1c, H2b and H1d, while the statistical significance test supported this acceptance and confirmed the hypothesized relationships. A strong significant and meaningful correlation is found between criterion variable YIBP and the above mentioned predictor variables (Multiple R "model 9"=0.897). The value of F- ratio "model 9" (F (7,360) =201.957 at p<0.000000000) is statistically significant indicating that the results of the model could hardly have occurred by chance. Thus, the goodness-of-fit of the model considered satisfactory. The coefficient of determination, multiple R-square suggested that the proposed model is valid, the predictor variables of the model explained the major proportion (80.40 %) of the variability observed among the criterion variable YIBP (R2 "model 9"=0.804), which reinforce our confidence in the hypotheses testing results and provides support for the above mentioned association.

### Table 1 Summary output of the stepwise regression analyses (forward inclusion)

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R²</th>
<th>Adj. R²</th>
<th>SSreg</th>
<th>SSRs</th>
<th>SSTot</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.878*</td>
<td>0.765</td>
<td>0.764</td>
<td>681.007</td>
<td>209.164</td>
<td>890.171</td>
<td>1,366</td>
<td>1191.642</td>
<td>0.000000000*</td>
</tr>
<tr>
<td>2</td>
<td>0.881*</td>
<td>0.777</td>
<td>0.775</td>
<td>691.024</td>
<td>198.930</td>
<td>890.171</td>
<td>2,365</td>
<td>640.014</td>
<td>0.000000000*</td>
</tr>
<tr>
<td>3</td>
<td>0.887*</td>
<td>0.786</td>
<td>0.784</td>
<td>699.649</td>
<td>190.522</td>
<td>890.171</td>
<td>3,364</td>
<td>445.568</td>
<td>0.000000000*</td>
</tr>
<tr>
<td>4</td>
<td>0.888d</td>
<td>0.789</td>
<td>0.787</td>
<td>702.562</td>
<td>187.609</td>
<td>890.171</td>
<td>4,363</td>
<td>339.842</td>
<td>0.000000000*</td>
</tr>
<tr>
<td>5</td>
<td>0.890*</td>
<td>0.792</td>
<td>0.790</td>
<td>704.623</td>
<td>185.548</td>
<td>890.171</td>
<td>5,362</td>
<td>274.941</td>
<td>0.000000000*</td>
</tr>
<tr>
<td>6</td>
<td>0.891*</td>
<td>0.794</td>
<td>0.791</td>
<td>706.966</td>
<td>183.205</td>
<td>890.171</td>
<td>6,361</td>
<td>232.175</td>
<td>0.000000000*</td>
</tr>
<tr>
<td>7</td>
<td>0.896*</td>
<td>0.802</td>
<td>0.799</td>
<td>714.321</td>
<td>175.860</td>
<td>890.171</td>
<td>7,360</td>
<td>208.894</td>
<td>0.000000000*</td>
</tr>
<tr>
<td>8</td>
<td>0.897*</td>
<td>0.801</td>
<td>0.798</td>
<td>713.104</td>
<td>177.067</td>
<td>890.171</td>
<td>8,361</td>
<td>174.310</td>
<td>0.000000000*</td>
</tr>
<tr>
<td>9</td>
<td>0.897*</td>
<td>0.804</td>
<td>0.801</td>
<td>715.695</td>
<td>174.476</td>
<td>890.171</td>
<td>9,361</td>
<td>174.476</td>
<td>0.000000000*</td>
</tr>
</tbody>
</table>

* a. Model1: Variables entered: (constant), DCP
  b. Model2: Variables entered: (constant), DCP, ORG
  c. Model3: Variables entered: (constant), DCP, ORG, PRC
  d. Model4: Variables entered: (constant), DCP, ORG, PRC, SMK
  e. Model5: Variables entered: (constant), DCP, ORG, PRC, SMK, CHN
  f. Model6: Variables entered: (constant), DCP, ORG, PRC, SMK, CHN, ACN
  g. Model7: Variables entered: (constant), DCP, ORG, PRC, SMK, CHN, ACN, TCH
  h. Model8: Variables entered: (constant), DCP, ORG, SMK, CHN, ACN, TCH
  i. Model9: Variables entered: (constant), DCP, ORG, SMK, CHN, ACN, TCH, CBO

Criterion Variable: YIBP

Furthermore, the adjusted $R^2$ of the model 9, which is a more conservative estimate of variance by considering error variance, is 0.801. This reinforces our confidence that the overall explanatory power of the research model considered high and quite capable of explaining the observed variance among the sample. As seen from table 1 among 9 predictor variables only 7 variables (developing customers profile, CRM organizational readiness, segmenting markets, identifying appropriate channels to reach customers, anticipating customers’ needs, CRM technical readiness, and customizing Islamic bank offers) were found to have a critical significant impact on the criterion variable YIBP, they succeeded in entering
into model 9 equation. The stepwise technique determined which of the initial 9 constructs should be included as predictors in the final equation.

Nevertheless, tracing the order in which these variables have been entered the equation suggested that developing customers profile (DPC) specifically have the most significant impact on Islamic Banks' profit performance as it alone explained 76.50 percent of such total variation ($R^2$ “model 1”= 0.765). For easily comparing and assessing the relative impact of each predictor variable on the criterion variable, standardized beta coefficients and t-test values of the 7 variables that succeeded in entering into model 9 were presented in table 2.

Table 2: Standardized and non-standardized coefficients of variables included in the stepwise regression

<table>
<thead>
<tr>
<th>Predictor *a</th>
<th>&quot;Model 9&quot;</th>
<th>Non-standardized Regression Coefficients</th>
<th>Standardized Beta Coefficients</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Symbol</td>
<td>Value</td>
<td>Symbol</td>
<td>Value</td>
</tr>
<tr>
<td>DCP</td>
<td>$b_{DCP}$</td>
<td>0.406</td>
<td>$B_{DCP}$</td>
<td>0.408</td>
</tr>
<tr>
<td>ORG</td>
<td>$b_{ORG}$</td>
<td>1.832</td>
<td>$B_{ORG}$</td>
<td>1.402</td>
</tr>
<tr>
<td>SMK</td>
<td>$b_{SMK}$</td>
<td>1.644</td>
<td>$B_{SMK}$</td>
<td>1.262</td>
</tr>
<tr>
<td>CHN</td>
<td>$b_{CHN}$</td>
<td>0.066</td>
<td>$B_{CHN}$</td>
<td>0.331</td>
</tr>
<tr>
<td>ACN</td>
<td>$b_{ACN}$</td>
<td>1.107</td>
<td>$B_{ACN}$</td>
<td>1.023</td>
</tr>
<tr>
<td>TCH</td>
<td>$b_{TCH}$</td>
<td>0.983</td>
<td>$B_{TCH}$</td>
<td>0.905</td>
</tr>
<tr>
<td>CBO</td>
<td>$b_{CBO}$</td>
<td>0.096</td>
<td>$B_{CBO}$</td>
<td>0.063</td>
</tr>
<tr>
<td>Intercept a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The finding shown in table 2 is consistent with the results summarized in table 1, the first dimension of CRM implementation developing customers profile had the highest effect on Islamic Bank's profit performance YIBP with positive association (Beta DCP= 0.408, t=5.086, p<0.000000) followed by CRM organizational readiness (Beta ORG =-1.402, t=2.608, p<0. 009). On the other hand, the last two dimensions of CRM implementation (identify and focusing on profitable customers, and assessing customers’ retention behavior) failed to enter the regression equation "model 9" denoting that they have less significant impact on Islamic Bank's profit performance in the Egyptian market. The values of the non-standardized regression coefficients in table 2 were utilized for mathematically predicting the Islamic bank's future profit performance by the following final research equation (EQ2):

$$Y_{IBP}= 0.133 + 0.406 DCP + 1.832 ORG + 1.644 SMK + 0.066 CHN + 1.107 ACN + 0.983 TCH + 0.096 CBO$$

Finally, table 3 provides a brief summary of hypotheses testing and their structural paths.

Table 3: Summary of hypotheses testing

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Structural Paths</th>
<th>Standardized Beta Coefficients</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>CRM &quot;DPC&quot; --------&gt; Y_{IBP}</td>
<td>0.408*</td>
<td>Supported</td>
</tr>
<tr>
<td>H1b</td>
<td>CRM &quot;SMK&quot; --------&gt; Y_{IBP}</td>
<td>1.262</td>
<td>Supported</td>
</tr>
<tr>
<td>H1c</td>
<td>CRM &quot;ACN&quot; --------&gt; Y_{IBP}</td>
<td>1.023*</td>
<td>Supported</td>
</tr>
<tr>
<td>H1d</td>
<td>CRM &quot;CHN&quot; --------&gt; Y_{IBP}</td>
<td>0.061***</td>
<td>Supported</td>
</tr>
<tr>
<td>H1e</td>
<td>CRM &quot;PRC&quot; --------&gt; Y_{IBP}</td>
<td>0.331*</td>
<td>Supported</td>
</tr>
<tr>
<td>H1f</td>
<td>CRM &quot;ACR&quot; --------&gt; Y_{IBP}</td>
<td>Excluded</td>
<td>Not supported</td>
</tr>
<tr>
<td>H1g</td>
<td>CRM &quot;ORG&quot; --------&gt; Y_{IBP}</td>
<td>Excluded</td>
<td>Not supported</td>
</tr>
<tr>
<td>H1h</td>
<td>CRM --------&gt; TCH</td>
<td>1.402*</td>
<td>Supported</td>
</tr>
<tr>
<td>H1i</td>
<td>CRM --------&gt; Y_{IBP}</td>
<td>0.905*</td>
<td>Supported</td>
</tr>
</tbody>
</table>

*p<0.00000000 levels of significant

**p<0.01000000 levels of significant

***p<0.05000000 levels of significant
The Results of Testing Hypothesis H₃

The results of descriptive analysis in table 4 did not support the acceptance of hypothesis H₃ (X~ = 1.7554347826087, S~ = 0.604229259850843, and Skewness= 0.170023716440492). Despite all Islamic banks operating in Egypt reported that they already implement customer relationship marketing, the findings showed that Egyptian banks, included in our study, are most likely practice limited features of CRM to improve their profit performance (57.61%), while the remaining percent either implement CRM partially (33.42 %), or fully (8.97 %).

Table 4: Descriptive Statistics of CRM implementation of Islamic Banks operating in Egypt

<table>
<thead>
<tr>
<th>CRM Implementation</th>
<th>Percent</th>
<th>Mean ( X )</th>
<th>Standard Deviation ( S )</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full</td>
<td>8.96%</td>
<td>1.755434</td>
<td>0.6042292</td>
<td>0.170023</td>
</tr>
<tr>
<td>Partial</td>
<td>33.42%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited</td>
<td>57.62%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The graphical presentation in Figure 1 clearly illustrated the findings discussed above; the values of the spider diagram strongly tends toward the right side, reflecting the limited CRM implementation among Egyptian Banks. A P-P plot of regression standardized residual for assessing the assumption of normality was conducted, to see if the error term \( \epsilon \) is actually normally distributed. The plot, in figure 2, showed that the data met the assumptions of normality, quantile pairs fell nearly on a straight line and quite close to the 45-degree line. Thus, it can be concluded that the data used in this research are approximately normally distributed and the fitted model is appropriate.
DISCUSSION AND CONCLUSIONS

This paper has taken a further significant step in contributing to both theory and practice of and to help address some gaps in the current body of literature. More specifically, this study has made a number of important practical (managerial) implementations and theoretical (academic) contributions. In term of practical implications, the results confirmed the importance of customer relationship management in Islamic banks, and showed that CRM implementation has a significant impact on bank's customer-based profit performance, thus, Islamic bank managers should continually strengthen the completeness of CRM for establishing lifetime value based on sustainable relationship and in turn enhance Islamic bank competitive capabilities and profit performance. Also the results can help practitioners and Islamic Banks to develop more customized customer relationship practices as well as considering the barriers of both organizational and technical CRM readiness. As a result of having good CRM database, Islamic banks can easily segment their customers efficiently, and marketing segmentation can identify profitable and unprofitable customers. Finally, the current study found that the first feature of CRM, developing customers profile had the highest impact on Islamic Bank's customer-based profit performance; therefore this aspect especially should be taken in considering when formulating CRM strategies.

From an academic and research standpoint, this study provides empirical evidences and validation for the existing specialized literature concerning customer relationship management and added empirical weight to research addressing Islamic banks. The findings of the empirical study provide support for the research model and for the hypotheses regarding the directional linkage among its variables. The high overall explanatory power of our model indicated that this model is capable of explaining high proportion of the variance observed in Islamic banks' profit performance. Furthermore, this research attempted to integrate and encompass the most frequently cited constructs in the literature, and applied...
them in the local context in order to best examine the phenomenon, which have never been integrated before into one framework subject, to examination for validation and relationship. Therefore, the proposed model contained variables that have not been tested simultaneously in previous works.

**LIMITATIONS AND FURTHER RESEARCH**

As with all empirical study, our research has some limitations that present opportunities for future research. First, the research model was validated using empirical data gathered from Egypt and therefore the findings may be affected by the culture in this developing country. Since the study is cross-sectional in design, a further examination of our argument using a longitudinal study is recommended in the future to investigate our model in different time periods.

Apart from the above, we must point out that although the majority of the hypothesized relationships were validated, and significant, and our structural model yielded a relatively high level value of multiple correlation coefficient, the obtained value of multiple R-square ($R^2$), implies that other additional variables, which may not be considered in our research model, can be addressed to enhance the model ability for prediction.

However, there are other opportunities to build on this study in future research. Suggested areas include re-examining the proposed model in other countries with different cultures, and make comparisons, to see whether it can be applied. It would be valuable that future research use other theoretical bases or different methodologies and sample to derive different predictions. Also, future research can analyze the relative advantage of those Islamic banks which implement CRM opposed to other conventional banks to see the differences.

**REFERENCES**


