

# The Impact of Customer Relationship Management Technology Use on the Firm Performance Mediating and Moderating Role of Marketing Capabilities

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In this aggressive market competition, firms are trying to make extensive efforts to handle their firm performance in terms of profitability, market share and customer satisfaction. Today due to advance technology world is enjoying the pace of development. But the firms in industry of Pakistan which is the main sector of economy are still fighting with the gigantic records (especially about customer). Academic and practitioner current literature purposed that customer relationship management technology use is a cause to increase the firm performance, so far literature has mixed performance assessments in the existing literature. These equivocal results may be searching a mediator or moderator. For this reason, the purpose of this research paper is to see the sights of customer relationship management technology use impacts on firm performance by considering the moderating effect of architectural marketing capabilities. A theoretical model developed which is based on the information and literature. Simple random sampling technique was used for gathering the data. This study used primary data through a questionnaire. 180 out of 470 questionnaires used in this study and used correlation and regression for analyses and testing. The findings suggest that CRM technology use is associated with the three dimensions of organization performance (i.e. financial, customer, and growth). The results highlight that specialized marketing capability mediates the association between CRM technology use and performance and architectural marketing capabilities moderates the association between CRM technology use and performance.

**Key words:** *CRM technology use, specialized marketing capabilities, architectural marketing capabilities, firm performance,*

## Introduction

CRM is presenting approach of creating value through the suitable use of technology, data and customer knowledge for both the companies and its customers as well as and also describe the ways of communication and relations to make a permanent customer. CRM ensure connectivity between people, technology and organizational capabilities. So In recent years, many firms heavily invested in information technology (IT) to enhanced the interactions with customers before, during and after purchase. Yet, IT investment give the more returns as compare to the IT alone. Technological advancement and diminishing costs of technology become the reason of reduction of obstacles to adopting IT based CRM plan( Ciprian Mati, Liviu Ilie,2014;) (Bharadwaj 2000; Piccoli and Ives 2005). Different Industries adopt new techniques and strategy like customer relationship management technology use to help out the customers, employees and enhance the firm performance in this highly competitive market (Kim,2012;Payne & Frow,2005;Kumar,2010). In today's aggressive business atmosphere, the victory of firm stand on the ability to activate customer relationship management (CRM) which create maturity and implementation of more well-organized and valuable customer-focused strategies. CRM as a powerful strategic instrument could assist the firms to get a various objective. It helps in marketing departments to manage the campaigns regarding marketing with perfect objectives and goals and point out the best and profitable customer by given them highest level of services, information and build strong successful relationship with them (SAP.2004). At the present time, customer grow to be more challenging and demanding in the matter of tastes and needs, and now it is 5 to 6 time more cost effective to create a center of new customer as compare to old one (Mukhtar &Abubakae , 2015). So CRM importance enhanced in competitive world (Beladpas and Valmohammadi , 2014).

Past studies and surveys (Tzokas et al., 2015; Sarmaniotis et al., 2013; Jamali et al., 2013; Li and Mao, 2012; Volmohammadi and Beladpas, 2014; Sangle and Awasthi, 2011; Josiassen et al., 2013; Awan and Bukhari, 2011; Stein et a., 2013; Moreno et al., 2014) were reported that customer initiative failed about 70 to 75% but it was talking about past but now today situation is quite change. A large number of studies (Sarmaniotis et al., 2013 Josiassen et al., 2013; Awan and Bukhari, 2011; Stein et a., 2013) give the evidence that CRM implementation left strong impact on marketing and sales. The question is not what CRM is but actually the question is this how the CRM is effective and can implement its practices. How do you develop the vision, mission, goal, strategy and manage the expectation of the customer's, answer of these questions is attached with carrying out the technology. In this complicated and competitive environment it is harder than before to achieve the customer because marketers faces a lot of challenges like content ,geo location, services and customer experienced, personalization and customization.

Firms want to get the loyal customer to compete the competitors. So, customer relationship management attempts to efficiently and effectively manage the relationship between firm and

customer (Baran et al., 2008). Today customer are more demanding and their expectations are very high. Most organizations are often not met these expectation due to the lackness of complete and up to date information about the customer (Baran et al.,2008). Firm have to face competitive disadvantage without the customer relationship management (Arsic, Banjevic, Nastasic, Rosulj, & Arsic, 2018 ).Without CRM firm have to face problem in data warehousing ,call centre and may be implementation of the Ecommerce (Baran & Galka 2013). Many firms have been invested on customer relationship management. But a verity of records (Raman & Pashupati,2004;Rigbee.el al., 2002) explained poor business performance after the implementation of customer relationship management. previous studies about the IT and marketing point out that CRM applications are not bringing the expected results about business performance( Reinartz et al,2004).only 30% achieved improvement in the business performance after the using of CRM technology( Cornor and Hinton,2002;Bull,2003).

Mostly IT related research throw the spotlight on the IT investment of customer relationship management and there is call for further research about the more understanding and explanation from CRM phenomenon (Romano,2000;Reinartz et al.,2004,Payne & Frow,2006;Doherty & Lockett,2007; Hamola,2016 ).These conflicting findings hint at the potential influences of unexplored mediating or moderating factors and the need of further research on the mechanism by which CRM technology leads to improved business performance .Chang,Park&Chaivy,(2010) examined the relationship between CRM technology use and firm performance by using architectural marketing capabilities as a mediator. However, they did not examine the effect of specialized marketing capabilities as a mediator.

This research work addressed the following objectives: (1) To examine the effect of CRM technology use on different magnitude of firm performance. Specifically, we discussed some background and results of CRM technology use and find out the position of our result in the Pakistan domain. (2) To investigate the mediating effects and as well as moderating effects of marketing capabilities (specialized and architectural ) on the relationship between CRM technology use and firm performance dimensions

## 2. Literature Review

Mostly researchers and experts refer the CRM technology to technical and information technology solution which enhance the information exchange system and communication between customer and organization (Ernst et al., 2011). In literature experts should point out differences between the people, processes and technology use which develop the whole concept of CRM. There are three fundamental parts of CRM technology (Keramati et al., 2010).

- (1) (two way communications technologies ) between the customers and company

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(2) ( Decisions technologies ) Provide the ability to analyze the data

(3) ( Facilitate technology ) Excellent internal operations

Front office and back office applications are stick with each other due to the CRM technology which provides proper analysis and modeling (Buttle, 2004; I.J.Chen & Popovich, 2003).The modern view about CRM, the use of technology and information technology try best to develop the relationship with consumers.Due to the use of technology in CRM, it increase and keep long term relationship with consumers, develop business strategy, increase profit and assist CRM processes.Not only the few qualities can define the CRM but today it used customer service staff and sales to coordinate the contact with customer. As well as used as a marketing instrument to segment from target customer to track the customer activities (Shoemaker, 2001; Speier & Venkatesh,2002;Ling & Yen,2001). If firm wants to get the proper benefit from CRM than it is essential that marketing deapartmant, sales department and IT department work closely (Yu,2001;Ryals & Knox,2001).some researchers (Alavi & Leidner,2001;Davenport &Klahr,1998;Zablah et al.,2004;Richard,2003; Pohludka, Stverkova, & Slusarczyk, 2018) emphasized that CRM plays a potential contribution towards the organizational knowledge and it is fundamental for the market orientation. So through an inclusive design of electronic business, create trouble free for customer, customer focus on the product and redesign the business processes CRM technology add value in the business (Turban et al., 2003).

In both popular and academic literature CRM system have the mixed reviews (Markowitz, 2002' Speier & Venkatesh,2002;Arnold,2002;Casselman,2003;Ling & Yen,2001;Karimi et al ;2001;Lapla,2002).The president of People soft company Craig Conway said that the companies which adopt CRM solution suffers “overpromising and under delivering” .while Markowitz,(2002) stated that to get the potential benefit and strategic plan from CRM system needs extra meeting and time. As opposed, some researcher and experts claimed that without technology, CRM strategy will end in failure. Right information, right people, right time make possible to take the right decisions by using the suitable advance technology (Biggam, 2008). It is the vital driver which bring the change in the company (Sigala, 2004). CRM technology have strong impact on marketing capabilities, on performance of a company and on satisfaction of the customers(Biggam.2008). IT group often impetus for CRM technology because these experts did not see only the opportunities for enterprise but also mention the difficulties because of the non standardizes infrastructures ( Goodhue et al.,2002).because of the collaboration of marketing and technology ,CRM technology success is confirm(Ling & Li,2001). CRM adoption is not only the job of marketing department but it is all about the company practice. Because few aspects like focus on loyalty plan, apply new IT system and profitability analysis of customers cannot bring the automatically success in CRM (Ling & Li, 2001; Krizanova, Gajanova, & Nadanyiova, 2018).So, we cannot deny the importance of CRM technology. There is linking between the IT applications and marketing capabilities to

develop the firm's ability (shoemaker, 2001). The relationship between CRM technology and people, processes and technology has not been particularly checked with respect to the consumer relationship. CRM system has positive impact on customer service such as satisfaction and retention. Karimi, Somers & Gupta (2001) call for further research to examine the integration of CRM technologies. A lot of literature proved that data base application and CRM technology can construct stronger relationship via up selling and cross selling (Wedel, de Rosa, Kamakura & Mazzon, 2003; Kammkura, Ramaswami & Srivastava, 1991). Cass and Laure (2002) stated that firms handle consumers through CRM according to the firms plan but not according to the customer plan. Customer background, customer experiences cannot recognize through CRM. A study conducted by (Hendriyani & Auliana, 2018) on transformation of the relationship marketing. The research method is qualitative with descriptive approach. Data collected technique was literature. The concluded remarks were that profitability, sales increase, customer retention, customer engagement and loyalty are main aim of transformation of the relationship marketing to CRM technology. Due to the technology customer would have 24 hour connection with organization. By identifying the organizational capabilities, we can better understand the marketing capabilities. Marketing capabilities is believed as a company's ability to accommodate and understand the markets requirements and needs (Srivastava et al. 2001). to meet the customer needs, firms use appropriate resources for performance of marketing actions (Day 1994; Chang 1996).

According to the resource based view, firm is making up with a bundle of capabilities and resources. Because firms wants to lead the differential performance (Barney, 1991; Peteraf, 1993). resources could be divide into tangible and intangible while capabilities submit as skills and repeatable patterns which carry out different activities (Grant, 1991; Finney et al., 2008; Amit and Schoemaker, 1993). Vorhies & Mogan, (2005) conducted field interviews through open ended questionnaire of 63 managers. they identified 8 different marketing capabilities which contributes to firm performance. they are price, product development, channel management, marketing communication, selling, market information management, marketing planning and marketing implementation. Further Vorhies & Morgan classified into two subset (1) specialized capabilities (2) architectural capabilities. Vorhies & Morgan, (2005, p.106) highlight the difference between later and new understanding of marketing capabilities. Previous literatures explain "specific marketing mix based work routines," but later explain it "the marketing strategy formulation and execution work routines. To achieve product market goals, marketing capabilities are vital part in resource deployment. These capabilities are effective and efficient in firm's strategies because these coordinate and organize the marketing activities (Vorhies et al. 2009). Planning and implementation capabilities give support to strategy by expanding the marketing plans and collect the relevant information (Kohli and Jaworski 1990; Morgan et al. 2003). Past studies disclosed that organizational performance increased due to the successful CRM implementation which develop the marketing capabilities (Krasnikov et al. 2009). There are

various benefits of marketing capabilities from which the firm's financial and market performance will be increase (Kanibir et al.,2014;Nalcacia and Yagci,2014; Ripolles,2011;Merrilees et al.,2010).For example brand management, marketing sensing,CRM define revenue and margin growth and product development (Morgan et al.,2009;Ripolles,2011;Baneerjee,2013).Wilden et al (2014) used 228 firms for survey and checked the relationship between technological and marketing capabilities with firm performance. They concluded that marketing capabilities have association with performance in high competitive environment and technological capabilities increase the firm performance in stable competitive environment.

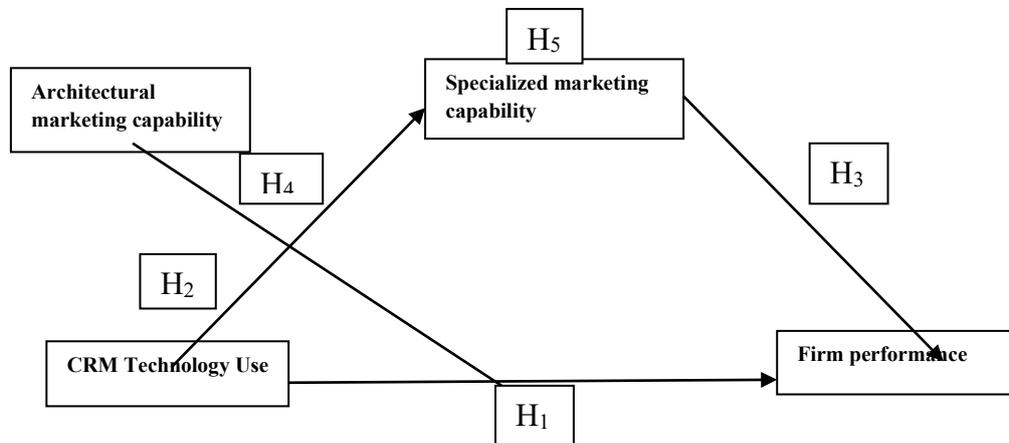
All variables have positive impact on firm's performance. Sok et al.,(2013) indicated that effect on innovation, learning capabilities and marketing contribute directly on the overall performance of the firm. He collected the data from SMEs. Mu,(2015) investigate a new model of marketing capabilities in which he measured marketing capabilities through new product development ,structural factors of organization and from inside and outside aspects .The results shown that for the adjustment of external and internal changes such as organization structural factors and product innovation, the marketing capabilities are really important.A study conducted by Nalcacia and Yagci,(2014) on the impact of marketing capabilities on the export performance proven that product oriented strategy to hold market oriented strategy to meet the increasing intensive competition. More freshly, Fidel et al. (2018) have considered its impact on business innovation capabilities. M.Saleh. (2015) conducted the research on the role of marketing capabilities in firm's success. The objective of this research is to show the significance of marketing capabilities deeper through literature. He identify that customer never be well aware of a business without the marketing strategy.product, market sensing other capabilities and partner linking have positive effects on marketing capabilities.

Researchers have developed a range of different methods to measure the performance of the firm. Firm performance has the positive relationship with profitability, rate of return, sales turn over and market shares. Performance has the different categories for measurement such as financial and non financial (Wuand Lu, 2012), one dimensional and multi dimensional tangible and intangible and output and outcome indicators (Sigala, 2004). Herman's, (2009) claimed companies rely on qualitative and quantitative indicators of performance. Market coverage, sales, profitability, win loss ratio, frequency of visit are quantitative performance indicators (Kumar et al., 2013) while brand familiarity, customer retention and satisfaction are qualitative indicators of performance (Tuhhilin, 2012). Conventional financial measure (net income, earnings per share, revenue, profitability) still common method to assess the firm performance (Williams & Naumann,2011).customer life time approach have strong indication about future performance but it is hard to implement.Verhoef et al., (2010) add in literature, the value of present and future customers is the best method of assessment of company 's value. Customer life time value term is the sum of revenue minus total cost (Fu & Ku, 2010).net present value is also a step to calculate customer life time value (Gneiser,



2010). It is difficult to calculate future decisions of customer (Fan&Ku, 2010). The study in American service firms (Lunemann, Reimann & Chase., 2008) showed the relationship with firm performance and CRM. It used interview for cross country survey. Most firms embraced the CRM system. CRM didn't directly affect the firm performance but, it become a cause to increase the sales growth and reduce the cost. Research in European services firms (Devinney, Coltman & Midgley; 2011) showed the positive relationship between CRM and firm performance. For this study, data collected from the cross sectional survey of 100 banks. He used the resource based view of the firm in which IT and other organizational capabilities has been discussed. The objectives of the research are why CRM program can be successful and what capabilities are required to support success. Hyungn su et al., (2012) studied the impact of CRM on firm performance in china. Data collected through questionnaires and interviews. CRM technology and knowledge management have positive impact on the firm performance. Richardson & Haislip, (2017) examined that CRM implementation improves sales, sales effectiveness and capability to gather account receivable. CRM implementation enhance the overall firm performance (marketing and financial). specific return on assets and cash flows from operations. Mohammad Alem et al., (2014) observed the mediating effect of marketing capabilities on the relationship between organization performance and CRM technology. He collected the data of 447 hotels firm and used correlation and regression for analyses and testing. Their findings explained that marketing capabilities such as planning and implantation play a mediator role between CRM technology and different dimension of organizational performance. Al Weshah, et al., (2018) checked the role of CRM system on telecommunication firm's performance. He collected the primary data through self administrated questionnaire from 140 respondents. The findings shown the positive relationship between CRM dimensions and firms performance. Gonzalez-Benito et al., (2017) found that CRM strategy depends on the suitable use of technology. They used the data of 208 business customers of an international CRM software provider. They analyzed that victorious management is a basic requirement for the company to get the full benefit from CRM software and training, responsiveness affects to gain the CRM success. Ahani & Rahim (2018) investigated the relationship between firm performance and social CRM. They developed the model and proposed the relationship between technological environmental, organizational, performance and process factors of CRM recommended. 240 SMEs data has been used for this study. They concluded that the positive relationship between CRM and firm performance.

## The Conceptual framework of CRM technology use and firm performance and Hypotheses



**Figure 1. Research Model**

### 3. Theoretical background and Hypotheses

#### 3.1 Customer relationship technology use:

From the past till today, the centre of marketing development shifts from the customer attainment to customer retention (Pelham, A.M. 1997). It is the gateway action in any business. How any organization precisely meets its customer needs and solves its related problem? And simply how does an organization quickly look forward about the next need of the customer? These are all those questions which answers are related to the customer retention. To achieve these objectives firms think about the strategic issues for example personalization, compile the customer data, back to back customer care and retain the customer through the customer relationship management (Winter, S.G., 2001). CRM processes contain or generate the customer knowledge, figuring their awareness of the firm and promoting the customer relationship. "IT Support for CRM" is related to the information technologies (Srivastava et al., 1999). Mostly practitioners and researchers took the CRM as just an investment in simple software technology. Without a doubt some authors (Reinartz et al., 2004) have equated the CRM technology and CRM at the same line. But with the passage of time CRM technology is just a main element of CRM, and CRM itself is a more expensive and complete approach for the developing the relationship with customer. So, CRM technology is defined as computer technology which is organized to achieve the major aim to build the strong and long lasting customer relationship management (Chen and Popovich, 2003; Sin et al., 2005; Reinartz et al., 2004, p.296; Yim et al., 2004; Garrido-Moreno & Padilla-Melendez, 2011). Particularly, in this study CRM technology's four activities have been taken; sales support, services support (Meuter et al., 2000; Speier and Ventatesh, 2002), analysis support (Jayachandran et al., 2005), and data integration (Jayachandran et al., 2005) and access

support(Rigby, Reichheld ,and Schefter,2002).So,information technology which are need of CRM contain front office application supporting sales,service 321and marketing and back office applications facilitating the integration and analysis of data(Jayachandran, Kaufman, Sharma and Raman,2005;Greenberg,2001).

### **3.2 Marketing Capabilities**

It is essential to understand the marketing capabilities firstly recognize the capabilities of any firm. According to the resource based view perspective organization is compiled with bundle of resources and different capabilities with create different performance in the firm (Peteraf, 1993; Barney, 1991).Capabilities are company's repeatable actions and skills which firm carrying out different activities efficiently while resources are referred as the tangible and intangible factors (Finney et al.,2008;Grant,1991;Amit and Schoemaker,1993).So according to the resource based view,marketing capabilities are firm's repeatable actions which carry out marketing-related wants of the business effectively.Vorhies and Morgan (2003) developed the marketing capabilities concepts into 2 subset one is specialized capabilities which are marketing mix based activities for example pricing, product development, channel management ,marketing communication, selling and market information management play a crucial role. These activities are important for an organization because these activities are highlighting of those market strategy which is based on product differentiation. So, current and potential customer depends on communication.The second is architectural capabilities which are marketing planning and implementation. These activities have a strong impact on the firm performance and sustain the different strategies plans through the collection of information of market (Morgan et al., 2003; Kholi & Jaworski,1990).

### **3.3 Firm performance**

The measurement of firm performance is essential for the effectiveness of any firm strategies. Basically it is the multidimensional idea which cannot describe through a single aspect (Andolph & Dess, 1984;Venkatraman.1989). Some authors estimate the performance through growth of market,some through profits and few authors judge the performance through comparison with competitors (Xiaoying et al.,2008).According to the Yildiz (2010) through the qualitative and quantitative criteria firm performance can be measure. Financial performance is not enough to check the competitive position of the firm performance. Kaplan and Norton, (1992) proposed a inclusive model which called "Balanced Scorecard"(BSC) in which four dimensions are discussed like financial, customer, internal process and learning and growth. Wu & Lu (2012) discussed the financial as well as nonfinancial performance for tangible and intangible assess .we need all overall performance including financial and non financial to understand the complete effect of CRM on firm (Wu & Hung,2007).

### **3.4 CRM technology use and firm performance**

Firm performance can be measure into many different groups (Sigala,2004) for example, financial and non financial, tangible and intangible, output vs. outcome. There are some quantitative and qualitative measures of performance. Many mangers and companies CEOs are interested in quantitative measures such as sales, share of new customer, revenue, market coverage area and profitability etc.customer satisfaction, customer loyalty and brand adopted are some of the qualitative measures of firm performance (Hermans,2009).

H1: CRM technology use is positively related to the firm performance.

### **3.5 Linking CRM technology use to specialized marketing capabilities**

To identify the direct effect on firm outcomes of CRM technology is most important and critical issue. Previous literature is full of with conflicting results about the direct relationship of firm performance and CRM technology, even though there is the strong conceptual relationship. But there is need for further research that observes the variable which plays mediating role.So, managing the customer relationship bring the spirit of marketing idea (Morgan and Hunt., 1994; Webster, 1992).Specially, CRM technology make possible organization to prepare more proper and suitable marketing strategies and to complete exact marketing actions more quickly by contributing excellent front line support (Dutta et al.,1999;Chen and Popovich,2003).Further, Payne and Frow (2005) put forward that CRM requires a cross functional integration of processes ,people , and marketing capabilities .(p.168) and Boulding and Colleagues (2005) recommended that “the effectiveness of CRM activities depends on how CRM is integrated with preexisting capabilities”. So, by taking together CRM technology become a cause to increase the marketing capabilities by assisting the mangers and helping the employees to achieve specific marketing aims more efficiently and more effectively (Chang et al.2010). Therefore, we move towards the following:

H2: CRM technology use is positively related to specialized marketing capability.

### **3.6 Linking specialized marketing capabilities and firm performance:**

According to the Day (1994) and Prahalad Hamel (1990) described that to gain competitive advantage, firms have to adopt various capabilities. Grant (1996) admitted that capabilities always developed the value of the firm and multifaceted patterns of coordination among the resources and people have been appearing. This coordination always increases the skills and knowledge of the employee. Many authors discussed the marketing capabilities in the sense of competitive advantage (day1994;Vorhies and Harker 2000; Morgan and Vorhies 2009).knowledge, resources and skills combination is the marketing capabilities which enhance the value of firm product and services for the competitive environment( Day,1994).

Vorhies and Harker (2000) investigated the marketing capabilities and they selected the six marketing capabilities which are more effective and important regarding the competitive advantage. These are marketing research, price, promotion, product development, channel management and marketing management. Which later called the specialized marketing capabilities (Morgan et al., 2005). According to Vorhies and Morgan (2005) these specialized marketing capabilities have the special function which is based on the processes and used within the firm due to coordinate and transform the resources. These are very important for marketing strategy (Morgan and Vorhies 2005).

H3: Specialized marketing capabilities positively relate to firm performance

### **3.7 CRM technology, specialized marketing capabilities and firm performance:**

According to Kransnik et al., (2009) confirmed that CRM technology has a leading role in the development of marketing capabilities which later have strong impact on organizational performance. Under the CRM literature, marketing capabilities are designed in such a way that utilize the skills and resources efficiently and make the valuable products. So, due to the marketing capabilities CRM technology has the chances to increase the firm performance (Azizi et al., 2009). In addition, cross functional recipe of people, processes and operations is very important for the successful CRM technology implantation (Payne & Frow, 2005). Boulding et al (2005) and Chang et al. (2010) also claimed that CRM technology use is strongly related to the firms existing other capabilities. Many authors (Morgan et al. 2010; Payne & Frow, 2005; Chang et al. 2010) found that marketing capabilities play a mediating role between CRM technology and firm performance.

H4: Specialized marketing capabilities is mediates the CRM technology use and firm performance.

### **3.8 CRM technology, architectural marketing capabilities and firm performance:**

Architectural marketing capabilities are very prominent capabilities in the marketing capabilities literature because of strong impact on firm performance. Basically the procedure of selection, incorporation and arrangement of multiple cross functional capabilities are the part of architectural capabilities (e.g., Galunic and Rodan 1998; Henderson and Clark 1990). According to Morgan et al. (2003) and Slotegraad & Dickson (2004) described the architectural marketing capabilities as a planning associated processes which processes are directly involved with the strategies. These strategies are mostly related to achieve the marketing related goals. Vorhies and Morgan (2005) argued that implementation linked processes that facilitate the deployment of the multiple and inter-related resource inputs required to enact strategic marketing decisions. According to Kransnik et al., (2009) confirmed that CRM technology has a leading role in the development of marketing

capabilities which later have strong impact on organizational performance. Under the CRM literature, marketing capabilities are designed in such a way that utilize the skills and resources efficiently and make the valuable products. So, due to the marketing capabilities CRM technology has the chances to increase the firm performance (Azizi et al.,2009).In addition, cross functional recipe of people, processes and operations is very important for the successful CRM technology implantation(Payne & Frow,2005).Boulding et al (2005) and Chang et al.(2010) also claimed that CRM technology use is strongly relate to the firms existing other capabilities. Many authors (Morgan et al.2010;Payne & frow,2005;Chang et al.2010) found that marketing capabilities play a mediating role between CRM technology and firm performance.

H5: Architectural marketing capabilities is moderates the CRM technology use and firm performance.

#### 4. Methodology

In this research our population is KSC listed firms. Different types of sampling techniques can be used in this research. In this research, we use non-probability sampling technique and in this sampling technique we use random sampling. Sampling is important for the purposeful quantitative research.The sample size of this research is 180 employees of different KSC 100 index listed firms in Pakistan. All measures which used in this research work were drained from the presented literature and adopted for this study.7 (much worse =7 to much better =1) and 5(5= strongly disagree to 1= strongly agree) point likert scale used in this study.CRM technology use measured with 15 item scale adopted from Jayachandran and Colleagues(2005).CRM technology use consist on four subset like sales support items are 5,service support items are 2,analysis support items are 5 and data integration and access support items are 3.Specialized marketing capabilities were operationalized using 5 subset. Which adopted from Morgan et al. (2003) and Morgan & Vorhies (2005).These five subset have different items like pricing with 4 items, product development with 5 items, channel management with 5,marketing communication with 5 ,while selling with 5 and last market information management with 5 items. Architectural marketing capabilities were categories into two sub dimensions like marketing planning with 4 items and marketing implementation capability with 4 items used in this study.Last in measuring firm performance which adopted Morgan and vorhies (2005) measures.3 sub dimensions measures with 11 items,like profitability 4 items, customer satisfaction with 3 items and market effectiveness with 4 items were included.

**4.1 Analysis of the data:** Information investigation for this study was done in two stages, the preliminary analysis and the main analysis. For preliminary analysis which includes primarily graphic measurements to abridge information, the demographic characteristics of the respondents were outlined in order to simplify the understanding of the data. In this section, the information accumulated from the employees of different organization in Pakistan in

connection to the research goals. This section talks about the aftereffect of the semi-organized survey responded 180 internal employees. Prior to the start of the examination concentrate on the criticalness, method of reasoning and motivation behind the study were given to the respondents. Moreover, the respondents have additionally been given the confirmation that every one of the information they will give are utilized with the end goal of the exploration and the personalities of the respondents will be secret. The conduct of this study comprises a comprehensive record of the demographic profile of the respondents. It is accepted that the properties of the respondents influence their conduct and replies on the overview questions.

## 5. Results

### 5.1. Introduction

To complete this study, we present and analyses the obtained data in this chapter. The data analysis is completed with the help of tables which contains the different frequencies and percentages. All results are recorded from the questionnaire.

### 5.2 Descriptive analysis

#### 5.2.1 Frequency distribution of Gender:

	Frequency	Percent
Male	115	63.88
Female	65	36.11
Total	180	100.0

#### Interpretation:

Above frequency table showed the demographics. The sample size is 180 to monitor the relative effects among the variables. 63.88% participants are male while 36.11% are female.

#### 5.2.2 Frequency distribution of sector or industry:

	Frequency	Percent
Manufacturing	89	49.44
services	43	23.88
distribution	48	26.67
Total	180	100.0

This table shows frequency distribution of sector or industry. Manufacturing sector participated more relative to other sector. Manufacturing sector consist 49.44% while services and distribution participated 23.88% and 26.67%.

### 5.2.3 Frequency distribution of position of employees:

	Frequency	Percent
CEOs	26	14.44
Marketing Manager	102	56.67
Marketing Head	52	28.89
Total	180	100.0

#### Interpretation:

Above statistical table shows that CEOs of organization are participated less relatively the other responder's position. CEOs contribution in this research is only 14.44%. marketing head participated 28.89% while marketing manager participate 56.67%.

### 5.3 Reliability

The reliability of instrument is used to check the reliability of the variables construct or data. If your value of construct is near to zero is that means your data in not reliable. Cronbach's alpha test is used to check the reliability. If it is greater than 0.7, it is suggested that the data found is reliable.

#### 5.3.1 Reliability Statistics

To test instrument reliability, Cronbach's Alpha calculated for the main dimensions. The result reveals acceptance reliability for each dimension verifying the instruments scaling. Reliability quality tests were likewise directed for this study, as it is basic with a specific end goal to build up strength and consistency of the instrument and for this reason, SPSS programming was utilized to test for the dependability of the instrument utilizing the most well-known and broadly acknowledged measure, i.e., Cronbach's alpha (Sekaran, 2003) As said before, the alpha esteem more like 1.0 ought to be focused, as it shows more prominent solidness and consistency of the instrument. Nonetheless, researchers set the cut-off estimation of alpha as 0.6 for the study (see Nunnally, 1978; Yong et al., 2007). According to Gerard ,et al,2006 ; Kenova and Johansson , 2006 0.600 is also acceptable value of cronbach's. The aftereffects of reliability quality examination are portrayed in Table shown in following way:

Sr.No	Variables	N	Cronbach Alpha
1	CRM technology use	180	0.719
2	Architecture marketing capability	180	0.810
3	specialized marketing capability	180	0.904
4	Firm performance	180	0.852

### Interpretation:

Table exhibits good level of reliability of scale items in terms of Cronbach's Alpha for those variable which use in this study for example CRM technology use ( $\alpha=0.719$ ), Architecture marketing capability ( $\alpha= 0.810$ ), specialized marketing capability (0.904) and firm performance ( $\alpha= 0.852$ ). All variables are greater than 0.7 that showed all variables are reliable and testable

## 5.4 Correlation

### Correlations

		FP	CRM	SPMC	ARMC
FP	Pearson Correlation	1	.888**	.896**	.797**
	Sig. (2-tailed)		.000	.000	.000
	N	180	180	180	180
CRM	Pearson Correlation	.888**	1	.849**	.759**
	Sig. (2-tailed)	.000		.000	.000
	N	180	180	180	180
SPMC	Pearson Correlation	.896**	.849**	1	.834**
	Sig. (2-tailed)	.000	.000		.000
	N	180	180	180	180
ARMC	Pearson Correlation	.797**	.759**	.834**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	180	180	180	180

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### Interpretation:

Above table shows the correlation among the different variables. In this table all variable have significance correlation due to the significance value of all variables are less than 0.01. Firm performance is positively correlated with customer relationship management, specialized marketing capabilities and architectural marketing capability. All variables (CRM technology use, specialized marketing capability and architectural marketing capability) are

positively correlated to firm performance. Correlation is applied to analyze that either all the variables are control with the policies or not. The significant value of CRM technology usage is 0.000 and it is lower than 0.05 which shows a positive significant relationship between both variable CRM technology Usage and architectural marketing capability. The Pearson correlation value is 0.759 it means there is a strong correlation between CRM technology Usage and architectural marketing capability. The strength of relation is strong. There is positive significant relationship between both variable CRM technology Usage and specialized marketing capability. The Pearson correlation value is 0.849 it means there is a strong correlation between CRM technologies Usage and specialized marketing capability. The strength of relation is strong.

Above table shows the positive significant relationship between both variable CRM technology Usage and firm performance. The Pearson correlation value is 0.888 it means there is a strong correlation between CRM technology Usage and firm performance. The strength of relation is strong. A positive significant relationship between both variable architectural marketing capability and firm performance. The Pearson correlation value is 0.797 it means there is a strong correlation between architectural marketing capability and firm performance. The strength of relation is strong. a positive significant relationship between both variable specialized marketing capability and firm performance. The Pearson correlation value is 0.896 it means there is a strong correlation between specialized marketing capability and firm performance. The strength of relation is strong.

## 5.5 Analysis of regression test

Regression analysis has been used to determine the effect of customer relationship management on specialized marketing capability and architectural marketing capability and firm performance.

## 5.6 Hypothesis Testing

Another significant attempt which is made to test the all the hypotheses was through regression analysis. All the constructs detailed results of the tests of hypotheses are provided in following multiple Tables by testing the following provided relationships of independent to dependent.

### 5.6.1 Firm performance: dependent variables

Independent variables	Coefficient	R-Square	Adj. R <sup>2</sup>	F	Sig.
CRM technology usage	1.131	.789	.787	664.323	.000

### Interpretation:

Regression tests were deployed to test the hypotheses. Above table shows 1 unit change in CRM technology usage will bring 1.131 units change in firm performance, and shows satisfactory positive association ( $R=0.789$ ) between CRM technology usage and firm performance with variance of 78.7% ( $\Delta R^2=0.787$ ). This shows that CRM technology usage positively influence firm performance thus confirming H1. Hypothesis is accepted. F statistics is greater than 10 it showed good fit model. There is large effect in positive direction.

### 5.6.2 Dependent variable: Specialized marketing capabilities

Independent variables	Coefficient	R-Square	Adj. R <sup>2</sup>	F	Sig.
CRM technology usage	0.859	.849	.721	458.873	.000

### Interpretation

Regression tests were deployed to test the hypotheses. Above table shows 1 unit change in CRM technology usage will bring 0.859 units change in specialized marketing capability, and showed satisfactory positive association ( $R=0.849$ ) between CRM technology usage and specialized marketing capability with variance of 72.1% ( $\Delta R^2=0.721$ ). This shows that CRM technology usage positively influence specialized marketing capability thus confirming H2. Hypothesis is accepted. F statistics is greater than 10 it showed good fit model. There is large effect in positive direction.

### 5.6.3 Dependent variable: firm performance

Independent variables	Coefficient	R-Square	Adj. R <sup>2</sup>	F	Sig.
Specialized Marketing Capabilities	1.128	.802	.801	722.460	.000

### Interpretation

Regression tests were deployed to test the hypotheses. Above table shows 1 unit change in specialized marketing capability will bring 1.128 units change in firm performance, and shows satisfactory positive association ( $R=0.802$ ) between specialized marketing capability and firm performance with variance of 80.1 % ( $\Delta R^2=0.801$ ). This shows that specialized marketing capability positively influence firm performance thus confirming H3. Hypothesis is accepted. F statistics is greater than 10 it showed good fit model. There is large effect in positive direction.

### 5.6.4 Dependent variable: Architectural marketing capabilities

Independent variables	Coefficient	R-Square	Adj. R2	F	Sig.
CRM technology Use	0.662	.696	.694	406.628	.000

#### Interpretation

Regression tests were deployed to test the hypotheses. Above table shows 1 unit change in CRM technology usage will bring 0.662 units change in architectural marketing capability, and showed satisfactory positive association ( $R=0.696$ ) between CRM technology usage and architectural marketing capability with variance of 69.4% ( $\Delta R^2=0.694$ ). This shows that CRM technology usage positively influence architectural marketing capability thus confirming H4. Hypothesis is accepted. F statistics is greater than 10 it showed good fit model. There is large effect in positive direction.

#### Mediation and moderation

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Release 2.16.3 \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D. [www.afhayes.com](http://www.afhayes.com)

\*\*\*\*\*

Model = 5

Y = FP

X = CRM

M = SPMC

W = ARMC

Sample size

180

\*\*\*\*\*

Outcome: SPMC

Model Summary

R	R-sq	MSE	F	df1	df2	p
.8488	.7205	.0894	458.8726	1.0000	178.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.4781	.0913	5.2355	.0000	.2979	.6584
CRM	.8587	.0401	21.4213	.0000	.7796	.9378



\*\*\*\*\*

Outcome: FP

Model Summary

R	R-sq	MSE	F	df1	df2	p
.9418	.8871	.0583	343.6127	4.0000	175.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.7757	.2232	3.4755	.0006	.3352	1.2163
SPMC	.4907	.0734	6.6810	.0000	.3457	.6356
CRM	.0750	.1012	.7411	.4596	-.1247	.2748
ARMC	-.2365	.0712	-3.3201	.0011	-.3771	-.0959
int_1	.1354	.0222	6.0874	.0000	.0915	.1793

Product terms key:

int\_1 CRM X ARMC

\*\*\*\*\* DIRECT AND INDIRECT EFFECTS \*\*\*\*\*

Conditional direct effect(s) of X on Y at values of the moderator(s):

ARMC	Effect	SE	t	p	LLCI	ULCI
1.6658	.3006	.0755	3.9815	.0001	.1516	.4496
2.3761	.3968	.0678	5.8520	.0000	.2630	.5306
3.0864	.4929	.0632	7.8005	.0000	.3682	.6177

Indirect effect of X on Y

	Effect	Boot SE	BootLLCI	BootULCI
SPMC	.4213	.1002	.2184	.6052

\*\*\*\*\* ANALYSIS NOTES AND WARNINGS \*\*\*\*\*

Number of bootstrap samples for bias corrected bootstrap confidence intervals:

5000

Level of confidence for all confidence intervals in output:

95.00

**Table 5.6.5: Results of Mediation Model 1**

	Path Coefficients		Estimates	Indirect Effect	
	SPMC	FP		Boot LLCI	Boot ULCI
<b>From → To</b>					
CRM	<b>0.85***</b>	<b>0.07</b>			
SPMC		<b>0.49***</b>			
R <sup>2</sup>	<b>0.720</b>	<b>0.887</b>			
F	<b>458.87</b>	<b>343.61</b>			
<b>Indirect effect</b>					
CRM → SPMC → FP			<b>0.42</b>	<b>.21</b>	<b>.60</b>
<b>Direct effect</b>					
CRM → FP			<b>0.07</b>	<b>-0.12</b>	<b>0.27</b>

\*\*\* p < 0.001

To test the mediation, PROCESS by Hayes macro in SPSS, Model 5, was used with 95% bias corrected confidence interval on 5000 bootstrap sample. The results are presented in **table.5.6.5** As proposed, CRM is positively related to SPMC with  $\beta = 0.85$ ,  $p < 0.001$ , CI<sub>95%</sub> [0.77,0.93]. The range of upper and lower limit does not include zero, therefore, H2 is supported. H 3 predicted that SPMC is positively related to FP with  $\beta = 0.49$ ,  $p < 0.001$ , CI<sub>95%</sub> [0.34, 0.63]. Hence, H3 is also supported. H 5 proposed that SPMC mediated the relationship between CRM and FP. The results show that H5 is supported as indirect effect is significant with  $\beta = 0.42$ , CI<sub>95%</sub> [-0.12, 0.27]. Moreover, since the direct effect is significant so full mediation of SPMC exists between CRM and FP.

**TABLE:5.6.7 Conditional direct effect(s) of X on Y at values of the moderator(s):**

Moderator:ARMC	Effect	SE	p	LL95%CI	UL95%CI	
	<b>1.6658</b>	<b>.3006</b>	<b>.0755</b>	<b>.0001</b>	<b>.1516</b>	<b>.4496</b>
	<b>2.3761</b>	<b>.3968</b>	<b>.0678</b>	<b>.0000</b>	<b>.2630</b>	<b>.5306</b>
	<b>3.0864</b>	<b>.4929</b>	<b>.0632</b>	<b>.0000</b>	<b>.3682</b>	<b>.6177</b>

Notes: SE = standard error; LL95%CI = lower level of the 95% confidence interval; UL95%CI = upper level of the 95% confidence interval

To evaluate the conditional direct effects of customer relationship management on firm performance via architectural marketing capabilities, as a function of different levels of the ARMC, we used the bootstrap method for analysis. At all levels of ARMC the effect is increasing, so ARMC have moderation between CRM and FP.

## 6. Conclusion and Discussion

This research contributes and addresses to the literature of customer relationship management technology use, marketing capabilities and firm performance. This research shows how CRM technology use is very beneficial for the Pakistani industry in such a great competitive environment. More exclusively, this study presents imminent over look between the linkages of variable exists. The importance of marketing capabilities enhance the relationship between customer relationship management and organization performance (Fournier & Wittenbraker, 2014; Van den et al., 2014). The study required to expand the previous research in the technology and marketing areas through investigating the impact of customer relationship management technology use and marketing capabilities factors on firm performance.

With respect to H1: CRM technology use positively related to the firm performance, the data demonstrate that CRM technology significantly and positively impacts on the firm performance. That is shows greater the CRM technology use level can get the greater the firm performance. This results supports the view that CRM technology use firms can enhance the performance in competitive environment (Kohli et al., 1993). With respect to H2: CRM technology use is positively related to the specialized marketing capabilities hypothesized, based on the extant literature, that the customer relationship management technology use would directly influence the specialized marketing capabilities ( ). However significant direct relationship was found between the CRM technology use and specialized marketing capabilities. This result supports studies where CRM technology use is considered as accurate predictor of performance (S. Henderson, 1998; Deshpande et al., 1993; Jayachandran et al., 2005). These results support Gummesson's (2004) point of view that CRM is very simple practical application of firm performance, whereby both the specialized and architectural marketing capabilities are required to enjoy the full success (Day et al., 2004). Firms with weak specialized marketing capabilities are less likely to successfully adopt CRM technology use to deliver customer value. The indication from this study point to that CRM technology can offer an suitable average, as well as present a response channel to interact with customers, from which market capabilities can successfully influence firm performance.

The result of testing H3; specialized marketing capabilities is positively related to the firm performance. The findings are consistent with studies of (Kanibir et al., 2014, Ripolles, 2011, Nalcacia and Yagci, 2014, Merrilees et al., 2010) as they found positive and significant relation among variables. They also said that the role of specialized marketing capabilities in achieving company's market and financial success is enormous. The result of testing H4: Specialized marketing capabilities is mediates the CRM technology use and firm performance. The findings are consistent with studies of Webster (1992) as he found positive and significant relation among CRM technology usage and architectural marketing capability. The result of testing H5: architectural marketing capabilities moderates CRM and firm performance (Day, 1994; Slotegraaf and Dickson, 2004). They also said that architectural marketing-related capabilities are also assumed to be key drivers of firm's performance. The



organization should focus on CRM while developing organization strategy for the purpose of implementing successful CRM initiatives. (Khan et al, 2014).

In this study, it was found that customer relationship management is significantly associated with firm performance via specialized marketing capabilities. Furthermore, the architectural marketing capabilities turned out to be an important moderator of the association between customer relationship management and firm performance. These findings suggest that improving the architectural marketing capabilities can lead to firm performance. There is a need to investigate other marketing capabilities factors that can mitigate the more positive effect of customer relationship management on firm performance.

### **6.1 Limitation and Future Area:**

As in other many researches, this study also has few limitations which suggest avenues of future research. Firstly, this research model is tested at a few Pakistani industries from where data collection was more complicated and limited. Respondents are not cooperative at a high level due to the business. So, there should be a conduct of semi-structural interviews to explore and highlight more aspects of the issues. It would be helpful to understand the implications of customer relationship management importance. Secondly, this model used the mediator specialized marketing capability and moderator architectural marketing capabilities in the relationship between customer relationship management and firm performance. Hence, future research can observe the mediating effects of other capabilities such as brand management capabilities and new product development capabilities. Future studies might also investigate the effect of CRM and marketing capabilities from the customer's point of view.

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