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Factors Affecting the Customer Relationship Management System Implementation Process

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2020

Abstract

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by

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MBA, American InterContinental University, 2012

MEd, American InterContinental University, 2013

BS, University of Khartoum, 1992

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Managers in the telecommunications industry face a high failure rate of customer relationship management (CRM) system implementations. The dynamic culture of employees' resistance to and readiness for CRM system implementation may contribute to successful implementation in U.S. commercial organizations. The purpose of this quantitative cross-sectional study was to examine the relationship among employee's resistance to and readiness for CRM system implementation, the culture of the organization, prerequisites for successful CRM system implementation, age, and gender. Using Rogers's innovation-decision process theory, an online survey was created and sent to a random sample of all customer service employees using CRM systems in the U.S. telecommunications industry. The survey included Resistance to Change scale, Pareek's culture profile, Organizational Change Recipients' Beliefs Scale, and customer relationship management capabilities measurement instruments for data collection. Survey responses from 79 employees were analyzed with multiple regression. The findings revealed that the culture of the organization, employee's readiness for CRM system implementation, and gender were significantly correlated with employee's resistance to CRM system implementation. The study produced a regression model that could be used to predict the success of CRM system implementation. The study may provide managers a better understanding of the interplay among the factors that facilitate or impede CRM system implementation and thus enhance employees' attitudes toward its implementation. As a consequence, managers may be able to mitigate the high failure rate associated with CRM system implementation.

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Dedication

Firstly, I would like to thank God, who gives me the strength and ability to complete my doctoral study. I dedicate this dissertation to my family members. I especially dedicate this dissertation to my mother, Zeinab Shashoug , who inspired me and always encouraged and motivated me to accomplish my educational goals.

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Table of Contents

List of Tables iv

List of Figures xi

Chapter 1: Introduction to the Study 1

Background of the Study 3

Problem Statement 8

Purpose of the Study 9

Research Question(s) and Hypotheses 10

Theoretical Foundation 11

Nature of the Study 14

Definitions 17

Assumptions 19

Scope and Delimitations 19

Limitations 20

Significance of the Study 22

Significance to Theory 22

Significance to Practice 23

Significance to Social Change 23

Summary and Transition 24

Chapter 2: Literature Review 26

Literature Search Strategy 27

Theoretical Foundation 28

Literature Review....36
Summary and Conclusions....96
Chapter 3: Research Method....99
Research Design and Rationale....99
Methodology....101
Population....101
Sampling and Sampling Procedures....102
Procedures for Recruitment, Participation, and Data Collection (Primary Data)....104
Pilot Study....106
Instrumentation and Operationalization of Constructs....108
Data Analysis Plan....118
Threats to Validity....127
External Validity....127
Internal Validity....128
Construct Validity....129
Ethical Procedures....130
Summary....131
Chapter 4: Results....132
Pilot Study....133
Data Collection....133
Validity and Reliability of the Instrument....133

Study Results 142
Summary 182
Chapter 5: Discussion, Conclusions, and Recommendations 184
Interpretation of Findings 185
Limitations of the Study 200
Recommendations 201
Implications 203
Conclusions 207
References 209
Appendix A: G*Power Analysis 237
Appendix B: Survey Questionnaire Instruments 238
Appendix C: Permission Letters 245
Appendix D: Scree Plots of Scales 249
Appendix E: Results of Levene's Test of Equality of Error 253
Appendix F: Results of Best-Subsets Regression 254
Appendix G: Results of XLStat Best Model 258

List of Tables

Table 1. *Subscales, Operational Definition, and Number of Questions on RTC Scale* 110

Table 2. *Example Survey Questions for Measuring the Response Variable* 110

Table 3. *Subscales, Operational Definition, and Number of Questions* 112

Table 4. *Example of Survey Questions for Measuring the OCTAPACE Culture* 113

Table 5. *Subscales, Operational Definition, and Number of Questions on OCRBS* 114

Table 6. *Example of Survey Questions for Measuring Employee's Readiness for CRM System Implementation* 115

Table 7. *Subscales, Operational Definition, and Number of Questions of CRM Capabilities Scale* 116

Table 8. *Example of Survey Questions for Measuring Prerequisites for CRM System Implementation* 117

Table 9. *Age Dummy Variables Coding* 117

Table 10. *Gender Dummy Variable Coding* 118

Table 11. *A Summary of Variable Data Collection* 118

Table 12. *Hypothesis Testing*: *Summary* 126

Table 13. *Results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of RTC Scale* 134

Table 14. *Factor Loading for PCA with Varimax Rotation of RTC Scale* 135

Table 15. *Cronbach's Alpha Reliability Statistics of Items Loaded on Component 1and 2* 135

Table 16. *Results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of OCRBS Scale* 136

Table 17. *Factor Loading for PCA with Varimax Rotation of OCRBS Scale* 137

Table 18. *Cronbach's Alpha Reliability Statistics of Items Loaded on Component 1 and 2* 137

Table 19. *Results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of OCTAPACE Scale* 138

Table 20. *Factor Loading for PCA with Varimax Rotation of OCTAPACE Scale* 139

Table 21. *Cronbach's Alpha Reliability of Items Loaded on the Four Components* 140

Table 22. *Results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of CRM Capabilities Scale* 141

Table 23. *Factor Loading for PCA with Oblimin Rotation of CRM Capabilities Scale* 141

Table 24. *Cronbach's Alpha Reliability Statistics of Items Loaded on Component 1 and 2* 142

Table 25. *Gender* 142

Table 26. *Age* 142

Table 27. *Descriptive Statistics for Y, X_1, X_2, and X_3* 143

Table 28. *Interaction Variables* 144

Table 29. *ANOVA with All Predictor Variables* 155

Table 30. *Model Summary of MLR with All Predictor Variables* 155

Table 31. *First MLR with All Predictor Variables* 156

Table 32. *Results of MLR Using XLStat Best Model with All Predictor Variables*.....157

Table 33. *Correlation Matrix of MLR Using XLStat Best Model with All Predictor Variables*.....157

Table 34. *Model Summary of MLR with Best Model with All Predictor Variables*.....158

Table 35. *Model Summary of Stepwise MLR with All Predictor Variables and Interaction Terms*.....159

Table 36. *Model Summary of Forward MLR with All Predictor Variables and Interaction Terms*.....159

Table 37. *Model Summary of Backward MLR with All Predictor Variables and Interaction Terms*.....159

Table 38. *Model summary of Best Model MLR with All Predictor Variables* X_1, X_2, *and* X_7.....160

Table 39. *Results of MLR Using SPSS Enter with Predictor Variables* X_1, X_2, *and* X_7.....161

Table 40. *ANOVA Using SPSS Enter with Predictor Variables* X_1, X_2, *and* X_7.....161

Table 41. *Model Summary of MLR Using SPSS Enter with Predictor Variables* X_1, X_2, *and* X_7.....161

Table 42. *Results of MLR Using SPSS Enter with Predictor Variables* X_1, X_2, X_7 *and Interaction Terms* X_8, X_{13}, *and* X_{18}.....162

Table 43. *ANOVA Using SPSS Enter with Predictor Variables* X_1, X_2, X_7, *and Interaction Terms* X_8, X_{13}, *and* X_{18}.....162

Table 44. *Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}* 163

Table 45. *Results of Best Model with Predictor Variables X_1, X_2, and X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....163

Table 46. *Results of Stepwise MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....164

Table 47. *ANOVA of Stepwise MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....164

Table 48. *Model Summary of Stepwise MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....164

Table 49. *Results of Backward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....165

Table 50. *ANOVA of Backward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....165

Table 51. *Model Summary of Backward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....165

Table 52. *Results of Forward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....166

Table 53. *ANOVA of Forward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....166

Table 54. *Model Summary of Forward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}*.....167

Table 55. *Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_{13} and X_{18}*.....167

Table 56. *ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_{13} and X_{18}*.....167

Table 57. *Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_{13} and X_{18}*.....168

Table 58. *Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{18}*.....168

Table 59. *ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{18}*.....169

Table 60. *Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{18}*.....169

Table 61. *Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{13}*.....170

Table 62. *ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{13}*.....170

Table 63. *Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{13}*.....170

Table 64. *Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{18}*.....171

Table 65. *ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{18}*.....171

Table 66. *Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{18}*.....171

Table 67. *Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{13}*.....172

Table 68. *ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{13}*.....172

Table 69. *Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{13}*.....173

Table 70. *Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_8*.....173

Table 71. *ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_8*.....173

Table 72. *Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_8*.....174

Table 73. *Results of MLR Using SPSS Enter with All Predictor Variables*.....175

Table 74. *ANOVA Using SPSS Enter with All Predictor Variables*.....175

Table 75. *Model Summary of MLR Using SPSS Enter with All Predictor Variables*.....175

Table 76. *Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_4, X_5, X_6, and X_7*.....176

Table 78. *Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_4, X_5, X_6, and X_7*.....177

Table 79. *Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, and X_7*.....177

Table 80. *ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, and X_7*.....177

Table 81. *Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, and X_7*.....178

Table 82. *One-Way ANOVA of Age Groups*.....188

Table 83. *Comparisons among Age Groups*.....188

Table E1. *Results of Levene's Test for All Predictor Variables*.....253

Table F1. *Results of Best-Subsets Regression with All Predictor Variables*.....254

Table G1. *Results of Best Model MLR with All Predictor Variables and Interaction Terms*.....258

List of Figures

Figure 1. Normal probability plot of regression standardized residuals to assess the normality of the residuals..... 145

Figure 2. Scatterplot depicting the relationship between the predictor variable, the culture of the organization (X_1), and the response variable (Y). 146

Figure 3. Scatterplot depicting the relationship between the predictor variable, readiness for CRM system implementation (X_2), and the response variables (Y). 147

Figure 4. Scatterplot depicting the relationship between the predictor variable, prerequisites for CRM system implementation (X_3), and the response variable (Y). 148

Figure 5. Scatterplot depicting the relationship between the predictor variable (X_4), and the response variable (Y). 149

Figure 6. Scatterplot depicting the relationship between the predictor variable (X_5), and the response variable (Y). 150

Figure 7. Scatterplot depicting the relationship between the predictor variable (X_6) and the response variable (Y). 151

Figure 8. Scatterplot depicting the relationship between the predictor variable, gender (X_7), and the response variable (Y)..... 152

Figure 9. Scatterplot of the predicted values versus the residuals for the response variable (Y)..... 154

Figure A1. Power as a function of sample size……237

Figure D1. Scree plot for RTC scale……...249

Figure D2. Scree plot for OCTAPACE profile scale……..250

Figure D3. Scree plot for OCRBS scale……..251

Figure D4. Scree plot for CRM capabilities scale……...252

Chapter 1: Introduction to the Study

In order to ensure a successful implementation of a customer relationship management (CRM) system, managers may need to consider the factors that facilitate or impede its implementation. CRM system implementation may represent a profitable organizational investment. According to Iriana, Buttle, and Ang (2013), managers invest considerably in CRM systems to enhance relationships with customers and increase revenues. Despite the considerable investment in CRM systems, managers struggle to achieve the desired outcomes of the investment. As a result, the failure rate of CRM system implementation is about 70% of implementation initiatives (Iriana et al., 2013; Pedron, Picoto, Dhillon, & Caldeira, 2016). Employees' resistance to CRM system implementation may contribute to the high failure rate of implementation. Researchers who have investigated CRM system implementation have indicated that employees' resistance to organizational change is an obstacle to a successful implementation (Croasdell, Kuechler, & Wawdo, 2013; Frygell, Hedman, & Carlsson, 2017; Pakdel, 2016).

Unsuccessful CRM system implementation may lead to undesirable outcomes. Lizar, Mangundjaya, and Rachmawan (2015) stated that the failure of organizational change management causes waste of resources, poor performance, and decreased employee morale. I viewed employees' resistance to CRM system implementation as any organizational factor that hinders a successful CRM system implementation.

Managers in telecommunications organizations may need to have a better understanding of the organizational factors that impact CRM system implementation and

the interrelationships among these factors (Wunderlich, Größler, Zimmermann, & Vennix, 2014). I viewed the culture of the organization, employees' readiness for CRM system implementation, and prerequisites for CRM system implementation as organizational factors that facilitate CRM system implementation. To investigate the interrelationships among these factors, I used the innovation-decision process theory to study the factors that influence employees' acceptance of CRM system implementation. Specifically, I examined the interrelationships among the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, employee's age, employee's gender, and employee's resistance to CRM system implementation.

My study may provide a unique contribution to organizational change management theory by investigating the interrelationships among the organizational factors that may facilitate or impede organizational change and employees' resistance to organizational change. Further, my study may provide a model for a successful CRM system implementation that addresses the factors that facilitate or impede CRM system implementation. By having a model for CRM system implementation, managers in telecommunications organizations can have a better understanding of the interrelationships among the factors that facilitate or impede CRM system implementation. As a result, managers can enhance employees' attitudes toward CRM system implementation and thus decrease the high failure rate associated with its implementation.

In the remainder of this chapter, I include the background of the study, the statement of research problem, and the purpose of the study. I also present the research questions and hypotheses, the outline of the theoretical framework for the study which includes a synthesis of different aspects of the innovation-decision process theory. Then, I describe the nature of my cross-sectional quantitative study and the definition of the study variables and terms. Finally, I address the assumptions, scope and delimitations, limitations of the study, and the significance of my study.

Background of the Study

CRM system implementation is a comprehensive business strategy for attracting and maintaining valuable commercial business customers in the United States (Parris, Bouchet, Welty Peachey, & Arnold, 2016; Peltier, Zahay, & Lehmann, 2013). In the telecommunications industry, maintaining a good relationship with customers is a crucial success factor. According to Mohammed and Mohammad (2015), CRM implementation is one of the important factors for success in telecommunications organizations. In the telecommunications industry, unsuccessful CRM system implementation can reduce customer satisfaction and loyalty, and increase customer churn (Mohammed & Mohammad, 2015; Sarkindaji, Bin Hashim, & Abdullateef, 2013). According to Sarkindaji et al., the annual rate of customer churn (customer switching) in telecommunications industries around the globe is between 10% and 67%. The consequence of this situation is a high competition among telecommunications organizations. In order to maintain a sustainable relationship with customers and reduce

customer churn, managers in telecommunications organizations must implement CRM systems successfully.

CRM system implementation, however, is a complicated process that requires effective management to obtain the desired benefits (Al-Rashed, 2018). The process of CRM system implementation involves six stages:

1. Initiation: Managers identify organization problems or opportunities and match them with information system (IS) solution.

2. Adoption: Managers support information system solution and allocate the required resources for implementation.

3. Adaptation: The organization creates and installs the information system and makes it ready for use.

4. Acceptance: Employees use the system.

5. Routinization: Employees use the system in daily job duties.

6. Infusion: Managers accomplish the intended benefits from CRM system implementation (Croasdell et al., 2013).

Because I was interested in examining the factors affecting CRM system implementation, I focused on the acceptance stage of CRM system implementation in which employees use the system.

CRM system implementation may require integration of essential organizational resources. According to Iriana et al. (2013), the interrelations among people, process, and technology affect CRM system implementation. Understanding the interrelationships among the three elements may lead to a successful CRM system implementation by

improving employees' attitudes toward CRM system implementation. A successful CRM system implementation requires considering employees, technology, and business capabilities (Parris et al., 2016). I focused on the acceptance stage.

Although CRM system implementation is important for organizations' success, a successful implementation remains a challenge for managers. Researchers who have investigated CRM system implementation have indicated that managers experience a high failure rate of CRM system implementation (Iriana et al., 2013; Pedron et al., 2016). According to Pedron et al. (2016) and Vijay Pal and Pooja (2014), the failure rate of CRM system implementation is about 69% of the total number of initiatives. Other researchers reported that approximately 70% of CRM system implementation initiatives fail (Farhan, Abed, & Ellatif, 2018).

Employees' resistance to organizational change could negatively impact organizational change implementation. Researchers examining organizational change have shown that employees' resistance to organizational change implementation is the major obstacle to a successful organizational change implementation (Appelbaum, Degbe, MacDonald, & Nguyen-Quang, 2015; Garcia-Cabrera & Garcia-Barba Hernandez, 2014; Lizar et al., 2015). Researchers who have examined the reasons for CRM system implementation failure, however, have not paid attention to organizational factors (Rahimi, 2017). In order to ensure a successful CRM system implementation, managers may have to consider the organizational factors that facilitate or impede CRM system implementation.

Prior research has shown that readiness for organizational change is antecedent to employees' resistance to organizational change (Holt, Armenakis, Field, & Harris, 2007; McKay, Kuntz, & Naswall, 2013). In the context of CRM system implementation, researchers have suggested that employees' resistance to information technology (IT) systems is one of the reasons for unsuccessful CRM system implementation (Laura & Mantas, 2013; Parris et al., 2016). Understanding the relationships between employees' readiness for and resistance to CRM system implementation might help managers in improving employees' attitudes toward CRM system implementation. Previous researchers who have investigated organizational change implementation, however, have not addressed the effect of the dynamic interrelationships among employees' resistance to organizational change and the factors that facilitate organizational change implementation (Al-Haddad & Kotnour, 2015; Latta, 2015; Koome & Theuri, 2015). I considered CRM system implementation as a form of organizational change. I also viewed the factors affecting organizational change implementation affecting CRM system implementation. Specifically, I focused on examining the interrelationships among employees' resistance to CRM system implementation and the factors that facilitate its implementation.

In addition to the integration of people, process, and technology, a successful CRM system implementation may require organizational prerequisites. For example, Wang and Feng (2012) argued that a successful implementation of CRM systems requires specific managerial skills and knowledge. Different organizational prerequisites may contribute to a successful implementation of CRM systems. The essential prerequisites

for CRM system implementation include customer interaction management capability, customer relationship upgrading capability, and customer win-back capability (Wang & Feng, 2012). The prerequisites for CRM system implementation may affect employees' attitudes toward its implementation. A lack of prerequisites for CRM system implementation may lead to employees' resistance to its implementation (Rao, 2015). Managers may need to understand the relationship among the prerequisites for CRM system implementation and employees' resistance to CRM system implementation. Shafique, Ahmad, Abbas, and Hussain (2015) suggested that these prerequisites can be used as a measure of a successful CRM system implementation. I used customer interaction management capability and customer relationship upgrading capability as the prerequisites for CRM system implementation. The reason for studying these two prerequisites was that the cost of winning back a customer is more than attracting a new customer (Lu, Lin, Lu, & Zhang, 2014). Managers may need to focus on these prerequisites (customer interaction management capability and customer relationship upgrading capability) to save effort and money. I examined the relationship among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, and employee's age and gender.

Readiness for organizational change influences employees' resistance to CRM system implementation. The culture of the organization influences employees' readiness for CRM system implementation (Shokohyar, Tavallaee, & Karamatnia, 2016). The culture of the organization is a critical element for a successful CRM system

implementation (Abdulwahab & Ali 2013; Frygell et al., 2017; Iriana et al., 2013). The culture of the organization and employee's readiness for CRM system implementation may interrelate with employee's resistance to CRM system implementation.

Prior research has yielded several frameworks for a successful CRM system implementation (Shokohyar et al., 2016). Researchers, however, have not addressed the interrelationships among the factors affecting CRM system implementation. I examined the interrelationships among a set of organizational factors that affect CRM system implementation. Employee's resistance to and readiness for CRM system implementation may affect its implementation. The findings of my study may provide managers in telecommunications organizations useful information for a successful CRM system implementation. My study may also provide managers a model for a successful CRM system implementation that addresses the factors that facilitate or impede CRM system implementation. The model may provide managers a better understanding of the interrelationships among the factors that facilitate or impede CRM system implementation. Consequently, managers may be more likely to implement a CRM system successfully.

Problem Statement

A successful CRM system implementation is crucial for telecommunications organizations to stay competitive in a fast-changing business environment. Managers continue to invest considerably in CRM systems. According to Holler (2015), managers in the United States were expected to spend more than $36 billion in CRM systems in the coming years. Despite the considerable investment, managers encounter a 70% failure

rate of implementation of CRM systems (Iriana et al., 2013; Pedron et al., 2016). Researchers who have studied CRM system implementation have not addressed the effect of the antecedents of employees' readiness for organizational change on a successful implementation of a CRM system (Ali, Zhou, Miller, & Ieromonachou, 2016; Croasdell et al., 2013).The general management problem was that managers may not have a clear understanding of the active interrelationships among employees' resistance to organizational change and the factors that facilitate organizational change (Al-Haddad & Kotnour, 2015; Latta, 2015; Koome & Theuri, 2015). The specific problem was that managers in the U.S. telecommunications industry may have little knowledge of the interrelationships among the factors that facilitate or impede CRM system implementation (Ali et al., 2016; Croasdell et al., 2013; Wang, Moyle, Whitford, & Wynn-Moylan, 2014). The consequence of this situation is that managers struggle to realize the potential benefits of CRM system implementation (Mohammed & Mohammad, 2015). Although numerous researchers have emphasized the effect of these factors, contemporary researchers may not have investigated the relationship among the factors that facilitate or impede CRM system implementation (Croasdell et al., 2013; Sanad, 2015; Wunderlich et al., 2014).

Purpose of the Study

The purpose of this quantitative cross-sectional study using a survey and multiple linear regression (MLR) was to examine the factors that facilitate CRM system implementation. Specifically, the objective was to evaluate the relationship among employee's resistance to a CRM system implementation process (response variable) and

five predictor variables: the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, employee's age, and employee's gender. The target population was full-time customer service employees in the U.S. telecommunications industry. Data were collected from the target population via an online self-administered survey using Survey Monkey.

Research Question(s) and Hypotheses

Research Question: What is the relationship among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender?

H_0: There is no relationship between the response variable (employee's resistance to CRM system implementation) and the predictor variables (the culture of the organization, employee's readiness for CRM system implementation, pre-prerequisites for CRM system implementation, age, and gender).

H_a: There is a relationship between the response variable (employee's resistance to CRM system implementation) and at least one of the predictor variables (the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender).

I tested the research hypotheses using MLR. Data were collected data via a self-administered online survey based on the following instruments: employees' resistance-to-change (RTC) scale developed by Oreg (2006); OCTAPACE questionnaire developed by Pareek (1997); organizational change recipients' beliefs scale (OCRBS) developed by

Armenakis, Bernerth, Pitts, and Walker (2007); and CRM capabilities scale developed by Wang and Feng (2012). I adapted the RTC and OCRBS scales by replacing the word "change" with the phrase "CRM system implementation" while the OCTAPACE questionnaire and CRM capabilities scale were not modified. I provide further information in Chapter 3.

Theoretical Foundation

I used the innovation-decision process theory developed by Rogers (2003) to guide my study because it pertains to individuals' behavioral patterns toward adoption of a new idea, practice, or object. The theory was built on the concept of diffusion of innovation (Rogers, 2003). Rogers defined the diffusion of innovation as a process through which an innovation is communicated over time through communication channels among the member of a specific social system. The diffusion of innovation theory was first applied to the context of sociology and agriculture, and then adapted in different fields including communication, public health, and education (Kim, 2015). The diffusion of innovation process includes four components: the innovations, communication channels, time, and social system (Rogers, 2003). The adoption of an innovation is influenced by several factors including individuals' behaviors and attitudes. According to Nemutanzhela and Iyamu (2015), individuals consider their cognitive (thoughts) and affective (feelings) attitudes toward adoption of an innovation to evaluate the innovation and decide whether or not to use the innovation (Nemutanzhela & Iyamu, 2015). According to Rogers, the element of time in the innovation process encompasses innovation-diffusion process, categories of adopters, and rate of adoption.

Rogers defined innovation-decision process as an activity in which individuals seek and process information about the innovation to minimize uncertainty about innovation. Rogers proposed a five-stage model for the innovation-decision process through which individuals pass during the adoption of an innovation or new idea. The innovation-decision model includes the following:

1. Knowledge (where individuals expose to the knowledge of an innovation).
2. Persuasion (where individuals develop attitudes toward the innovation).
3. Decision (where the individuals make a decision to adopt or reject the new idea).
4. Implementation (where the individuals implement the new idea).
5. Confirmation (where the individuals confirm their decision; Rogers, 2003).

The theoretical model offers a framework for a successful planning and sustaining the adoption and implementation of an innovation (Kim, 2015). Furthermore, Rogers identified five factors that influence the adoption rate of an innovation: relative advantage, compatibility, trialability, complexity, and observability. Researchers have proposed that relative advantage, compatibility, and complexity are the main factors that influence the adoption of an innovation (Nemutanzhela & Iyamu, 2015).

According to Law, Ennew, and Mitussis (2013), adoption of innovation can be considered the business process and behavioral change related to the use of CRM systems as a holistic strategy rather than a choice between adoption or not. I conceptualized CRM system adoption as CRM system implementation and as holistic strategy that involves employees using a CRM system where managers manage the implementation process.

In addition, Rogers (2003) suggested that the norms of a social system are a precondition for adoption of innovation. I considered the norms of a social system as the culture of the organization. Rahimi (2014) defined the culture of the organization as shared beliefs and values of the people within an organization. The culture of the organization impacts employees' attitudes and behavior in the workplace (Neelam, Bhattacharya, Sinha, & Tanksale, 2015). The culture of the organization might influence employees' attitudes toward CRM system implementation.

The culture of the organization is an important factor for CRM system implementation (Rahimi, 2014) and can facilitate or limit its implementation (Rahimi & Gunlu, 2016). Further, the culture of the organization influences readiness for organizational change which is considered one of the factors that contributes to the effectiveness of organizational change (Dhingra & Punia, 2016). Failure to establish readiness for organizational change can lead to employees' resistance to organizational change (McKay et al., 2013). Understanding the effect of the culture of the organization on a successful CRM system implementation is important because it influences both employees' resistance to and readiness for CRM system implementation. I provide further explanation in Chapter 2.

Another element of Rogers's (2003) theory was the diffusion of innovation curve (innovation adoption curve) which explains the variation of innovation adoption rate among individuals. Rogers classified the adopters of innovation into five categories: innovators, early adopter, early majority, late majority, and the laggards based on their perception of the innovation. The adoption curve provides information about the

characteristics of the individuals that lend them to adopt the innovation. I aligned adopter categories with employees' age groups. I provide further details about this alignment in Chapter 2.

I used the theoretical model to describe the interrelationships among the factors that affect CRM system implementation. According to Kim (2015), the diffusion involves three processes: (a) presentation of the new cultural element or elements to the society, (b) acceptance by the people in a society, and (c) the integration of the accepted elements into the preexisting culture. In an organizational change context, researchers have used the innovation-decision process theory to explain the factors that determine the adoption of a system or new technologies (Chang, Fu, & Jain, 2016; Sabi, Uzoka, Langmia, & Njeh, 2016). Researchers have used the innovation-decision process theory to study the implementation of CRM systems (Debnath, Datta, & Mukhopadhyay, 2016). I used the innovation-decision process theory to examine the interrelationships among the factors affecting CRM system implementation process.

Nature of the Study

My study was a quantitative cross-sectional study using a survey and MLR. The response variable was employee's resistance to CRM system implementation. Three predictor variables were the culture of the organization, employee's readiness for organizational change, and prerequisites essential for CRM system implementation (customer interaction management capability and customer relationship upgrading capability). The two other predictor variables were employee's age and employee's gender.

Researchers use the quantitative method to accept or disapprove a hypothesis using standard statistical analysis (Bettany-Saltikov & Whittaker, 2014). Quantitative research was consistent with the understanding of the relationships among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, the prerequisites for CRM system implementation, age, and gender. MLR was suitable because I was able to use it to examine the relationship among the response variable and predictor variables, and predict the response variable from the predictor variables (Field, 2013). MLR also helps a researcher in determining which predictor variables are significant in predicting the response variable and examines the interrelationships among the predictor variables (Field, 2013).

Quantitative methods are appropriate methods for determining the relationship between two or more quantifiable variables (Haegeman et al., 2013). A quantitative method is the best approach when the research problem is to determine the factors that influence the outcome (Field, 2013) as was the case I investigated. A mixed-method research includes both quantitative and qualitative approaches. Both qualitative and mixed methods research were not appropriate because the research question did not require in-depth exploration to understand the perspectives and experiences of employees involved in implementing a CRM system (Fetters, Curry, & Creswell, 2013) and I employed numerical data only (Fetters et al., 2013).

A cross-sectional design was appropriate for my survey study as I was able to collect data in one period of time from multiple employees across the U.S.

telecommunications industry (Lavrakas, 2008). A cross-sectional survey was also faster to conduct and inexpensive compared to a longitudinal study (Lavrakas, 2008). Other quantitative research designs are experimental and quasi-experimental designs. Experimental designs are appropriate for controlling the predictor variable in a study so that a researcher can determine the direction of causation (Frankfort-Nachmias et al., 2015). Quasi-experimental designs are appropriate for studying more than one sample (Frankfort-Nachmias et al., 2015). The experimental and quasi-experimental designs, however, were not appropriate designs because these designs involve manipulation of the predictor variables (Bettany-Saltikov& Whittaker, 2014; Frankfort-Nachmias et al., 2015). It was impractical to control any of the predictor variables in the study (Bettany-Saltikov& Whittaker, 2014; Frankfort-Nachmias et al., 2015).

The participants were full-time customer service employees using CRM systems and working in the U.S. telecommunications industry. I used SurveyMonkey services for recruitment, participation, and data collection. SurveyMonkey Audience staff members perform regular surveys to ensure that the target group is representative of the U.S. population (SurveyMonkey, *n. d.*). SurveyMonkey Audience has recruited millions of people who are willing to take part in surveys (SurveyMonkey, *n. d.*). These measures can enhance the representativeness of the sample of a study. SurveyMonkey Audience randomly selected the participants to match the inclusion criteria of my study.

SurveyMonkey Audience sent an invitation e-mail to participants to complete the survey. The e-mail included instructions to start the survey and a link to the survey, a web-based survey. The participants completed an electronic informed consent before

starting the survey to indicate that they were willing to participate in the study. The participants were allowed to withdraw from the survey at any time if they were unwilling to participate.

Once the participants completed the survey, SurveyMonkey Audience collected the data. There was no follow-up e-mail. Data analysis included descriptive statistics analysis and MLR. I used the Statistical Package for the Social Science (SPSS) software version 24, XLStat, and PhStat. I used different SPSS MLR methods including simultaneous (Enter method), backward, and stepwise regression to test my research hypotheses and to build a predictive model of the response variable.

Definitions

This section defines the terms and concepts I used, including common terms that have multiple meanings.

Customer relationship management: Researchers have defined the concept of a CRM in different perspectives. Cambra-Fierro, Centeno, Olavarria, and Vazquez-Carrasco (2017) described a CRM as a philosophy, capability and process, a technology tool, and a strategy. A CRM refers to a process of integration of people, system, and process to achieve customer satisfaction and enhance profitability (Chung & Chen, 2016; Debnath et al., 2016; Parris et al., 2016).

Employee's resistance to CRM system implementation: Employee's resistance to CRM system implementation involves cognitive, affective, and behavioral resistance (Piderit, 2000). Croasdell et al. (2013) described employees' resistance to CRM system implementation as employees' behaviors targeted to halt its implementation, prevent to

use of the system or discourage other members to accomplish the intended benefits of CRM system implementation. I defined employee's resistance to CRM system implementation as employees' affective and behavioral attitudes toward CRM system implementation.

Employee's readiness for CRM system implementation: Employees' beliefs, attitudes, and intentions considering the degree to which organizational changes are required and management's capability to implement CRM systems successfully (Armenakis, Harris, & Mossholder, 1993). I viewed employees' readiness for CRM system implementation as a precursor of employees' resistance to CRM system implementation to deal with employees' resistance to CRM system implementation.

The culture of the organization: The shared beliefs and values of members of an organization (Rahimi, 2014). The culture of the organization includes different levels: values, beliefs, ethos, and climate (Dwivedi, Kaushik, & Luxmi, 2014). The culture of the organization may impede or facilitate CRM system implementation (Debnath et al., 2016; Iriana et al., 2013). I defined the culture of the organization as the ethos of the culture that influences al of the activities within an organization (Rabindra, Madhusmita, & Lalatendu, 2017). The ethos represents eight cultural values: openness, confrontation, trust, autonomy, pro-action, authenticity, collaboration, and experimentation (acronymized OCTAPACE).

Prerequisites for CRM system implementation. Business processes, structures, and competencies essential for developing strategies for improving organizational performance (Shafique et al., 2015). The essential prerequisites for CRM system

implementation are customer interaction management, customer relationship upgrading, and customer win back capability (Wang & Feng, 2012). I considered customer interaction management capability and customer relationship upgrading capability as prerequisites for CRM system implementation.

Assumptions

Assumptions refer to the things related to the study that a researcher presumed to be true without proof (Ellis & Levy, 2009). I made some assumptions. First, I assumed that customer service employees implemented CRM system. This assumption was critical because I planned to investigate CRM system implementation. Second, I assumed that the participants were aware of the concepts in the study, resistance to organizational change, the culture of the organization, readiness for CRM system implementation, and the prerequisites for CRM system implementation. This assumption was necessary because if the participants understood the concepts, they were more likely to provide accurate responses. Third, I assumed that customer service employees understood that CRM system implementation is a form of organizational change initiatives. Finally, I assumed that the participants completed the online survey sincerely and provided valid responses.

Scope and Delimitations

The scope and the boundaries of my study were based on the assumptions and limitations of the study. I limited my study to full-time customer service employees working in the U.S. telecommunications industry who were using CRM systems. Data were collected data from one sample at one point in time. The participants were customer service employees using CRM systems. I excluded upper and middle-level employees

because customer service employees were considered as the group that is most likely to display resistance to organizational change (Giauque, 2015).

Delimitations define the boundaries of the research (Ellis & Levy, 2009). The importance of identifying the delimitations of a study is that they influence the external validity or generalizability of the research findings (Ellis & Levy, 2009). The delimitations of my study included that the participants were only customer service employees. Consequently, generalization to other employees or groups may not be ensured (Ellis & Levy, 2009). I examined the relationship among employee's resistance to CRM system implementation and the factors that impede or facilitate CRM system implementation in the U.S telecommunications industry. As a result, generalizing the findings of the study to other industries may not be warranted.

Limitations

My study included some limitations related to research methodology. One of the limitations was common method bias because of using a survey design. Survey studies involve some biases because of the rate of nonresponse and the instrumentation which prevent a researcher from making accurate inferences (Frankfort-Nachmias et al., 2015). I used four instruments for data collection. The common method bias refers to the bias in estimation of the correlation between two variables because of the common method variance (Jakobsen & Jensen, 2015). The common method variance is a shared variance among measured variables that occurs when a researcher assesses these variables using a common method (Siemsen, Roth, & Oliveira, 2010). To reduce the potential effects of the common method bias in the design of my study, I did not use similar scale types for

different items (Jakobsen & Jensen, 2015). Instead, I used four different types of response scales for measuring the variables. Another limitation was related to the use of a cross-sectional design. In cross-sectional designs, a researcher has no control over the rival explanation because randomization is not applied (Frankfort-Nachmias et al., 2015). Additionally, in a cross-sectional design, a researcher provides an incomplete picture of changes in population over time because the design involves studying one small group at one period (Salkind, 2010b). Therefore, cross-sectional data are not appropriate for examining employees' resistance over a period of time. Further, researchers using cross-sectional studies cannot determine the causes and effects of the variables under study. Accordingly, it would be useful to include qualitative investigation such as interviews to get the meanings employees ascribe to their working experience during CRM system implementation (Frankfort-Nachmias et al., 2015). In cross-sectional designs researchers often cannot manipulate the predictor variables; consequently, researchers cannot determine the direction of the causation (Salkind, 2010b). Another problem with cross-sectional design is that the confounding effect which refers to the lack of clarity regarding whether one or another variable produces observed outcomes (Frankfort-Nachmias et al., 2015). As a result, a researcher needs to deduce the direction of the causation theoretically or logically (Frankfort-Nachmias et al., 2015). All these limitations applied to my study.

The potential threat to the internal validity of measures may result from the participant selection process that prevents drawing an accurate causal conclusion from data about the population (Hedrick, Bickman, & Rog, 1993). Because the purpose of my

study was to describe the relationship among the variables and was not concerned with establishing causal relationships, the internal validity was not the focus of my study. To improve the external validity of the study, SurveyMonkey Audience employed a simple random sampling strategy to select the participants. To mitigate the threats to the internal validity, I used assessment instruments that have well-established psychometric qualities (reliability and validity).

Significance of the Study

The findings of my study may contribute to filling the gap in the literature on CRM system implementation by examining the relationship among the factors that facilitate or impede CRM system implementation and employees' resistance to its implementation. The model for CRM system implementation that I proposed may help managers in understanding organizational factors that affect a successful CRM system implementation. As a result, managers may be able to overcome employees' resistance to CRM system implementation.

Significance to Theory

With the increasing concerns about the high failure rate of CRM system implementation, my results were expected to provide managers useful information about the factors that influence a successful CRM system implementation. Managers can use this information to minimize employees' resistance to CRM system implementation. My results provided evidence that a relationship exists among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender.

My study may constitute a useful contribution to the scholars in the field of organizational change management and CRM systems who are interested in expanding research on CRM system implementation and models. My study may also constitute a unique contribution to the CRM system topic as the study might be the first research that provides a model for CRM system implementation that includes the factors that both facilitate or impede implementation. By making innovation-decision process theory, a theoretical framework, my study may expand the application of this theory to CRM system implementation.

Significance to Practice

A majority of CRM system implementation initiatives fail because managers may have not recognized the interrelationships among the factors that facilitate or those impede its implementation (Ali et al., 2016; Croasdell et al., 2013). My study could provide managers in the telecommunications industry a predictive model for a successful CRM system implementation to reduce the high failure rate associated with its implementation. As a result, managers may be able to overcome employees' resistance to CRM system implementation. Managers may also be able to promote employees' positive attitudes toward CRM system implementation (Stephan, Patterson, Kelly, & Mair, 2016) and, in turn, improve their overall performance.

Significance to Social Change

The findings of my study may have numerous implications for positive social change. The positive social change involves changing individuals' ways of thinking and behaviors to create benefits for them, organizations, and the society (Stephan et al.,

2016). Contemporary managers lack a comprehensive conceptual model for CRM system implementation that addresses the factors that influence CRM systems implementation (Laura & Mantas, 2013; Parris et al., 2016).The potential contributions of my study to positive social change may be providing managers a better understanding of the relationship among the factors that facilitate CRM system implementation process and employees' resistance to its implementation. As a result, managers may be able to enhance employees' positive attitudes toward CRM system implementation, improve their performance, implement CRM systems successfully, and thus obtain the potential benefits from CRM implementation. Consequently, managers can create benefits for the employees, organizations, and in turn, to the community. Accordingly, managers may decrease the high failure rate associated with CRM system implementation.

Summary and Transition

Despite the considerable investment in CRM systems, managers face a high failure rate of CRM system implementation (Iriana et al., 2013; Pedron et al., 2016). Numerous researchers defined employees' resistance to CRM system implementation as the main reason for CRM system implementation failure (Croasdell et al., 2013; Frygell et al., 2017; Pakdel, 2016). Managers in telecommunications organizations may not have recognized the interrelationships among the factors that affect CRM system implementation (Ali et al., 2016; Croasdell et al., 2013). I examined the interrelationships among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, employee's age, and employee's gender. My study was

limited to customer service employees using a CRM system and working in the U.S. telecommunications industry. Understanding the interrelationships among the factors affecting CRM system implementation could help managers in developing strategies for a successful CRM system implementation.

In Chapter 2, I address in details the prerequisites for CRM system implementation, the concepts of employees' resistance to organizational change, the culture of the organization, and the employees' readiness for CRM system implementation. In the literature review of the current research, I identify many opportunities for further investigation and gaps. In Chapter 2, I also include a discussion on different research perspectives in the literature regarding the main concepts in the study that relate to CRM system implementation.

Chapter 2: Literature Review

Managers may lack a clear understanding of the active interrelationships among employees' resistance to organizational change and the factors that facilitate organizational change (Al-Haddad & Kotnour, 2015; Latta, 2015; Koome & Theuri, 2015). Specifically, managers in the telecommunications industry may not have recognized the interrelationships among the factors that facilitate CRM system implementation and employees' resistance to its implementation (Ali et al., 2016; Croasdell et al., 2013; Wang et al., 2014). The purpose of this quantitative cross-sectional study, using a survey and MLR, was to examine the factors that facilitate CRM system implementation, specifically relationship among employee's resistance to CRM system implementation and three organizational variables plus age, and gender. The response variable was employee's resistance to CRM system implementation. The predictor variables were the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, employee's age, and gender.

In the 21st century, CRM system implementation is a very popular technology topic in the management field (Debnath et al., 2016). Managers invest considerably in CRM systems to improve business efficiency and effectiveness. Despite the considerable investment in CRM systems, managers are struggling to achieve the desirable outcomes of CRM system implementation (Mohammed & Mohammad, 2015). According to Iriana et al. (2013) and Pedron et al. (2016), the failure rate of CRM system implementation is about 70% of the total number of implementation initiatives. Researchers who have

studied CRM system implementation indicated that employees' resistance to organizational change is the key obstacle to a successful CRM system implementation (Croasdell et al., 2013; Frygell et al., 2017; Pakdel, 2016). The current literature showed that the culture of the organization and readiness for organizational change influence CRM system implementation (Iriana et al., 2013; Frygell et al., 2017). I investigated the interrelationships among the factors that facilitate or impede CRM system implementation and provided a model of CRM system implementation.

In this section, I provide a review of the existing literature related to the topic of my study. First, I present an explanation of the theoretical framework undergirding the research problem. Second, I explore the literature related to the concept of CRM systems and CRM system implementation in the telecommunications industry. I also explore the prerequisites for CRM system implementation. Then, I explore a review of the literature related to employee's resistance to organizational change, the culture of the organization, and employees' readiness for organizational change as they relate to CRM system implementation.

Literature Search Strategy

In order to examine the relationship among the concepts, a literature review using search engines and Walden University Library was conducted. I searched Crossref metadata, Google Scholar, and Google search engines. I also searched many databases using Walden University Library, including the EBSCO, Business Source Complete, ABI/INFORM Collection, Emerald Insight, SAGE, and ERIC. I used title searches within peer-reviewed journals from these databases to avoid duplication on the topic. The search

range was mainly from 2013-2019; however, I included older references that were important to understand the concepts in the study. Additionally, I included review conference proceedings in the areas of CRM system implementation and resistance to organizational change. The keywords and key phrases I used included *customer relationship management system implementation, customer relations, customer relationship management capabilities, organizational culture, the culture of the organization, openness, confrontation, trust, autonomy, pro-action, authenticity, collaboration, experimentation, culture, readiness for organizational change, employees' readiness for organizational change, resistance to organizational change, employees' resistance to organizational change, diffusion of innovation,* and *innovation-decision process.*

I scanned more than 100 peer-reviewed articles and professional books. I reviewed the full-text articles and books that specifically referenced adoption and implementation of a CRM system, prerequisites for CRM system implementation. Further, I included a review of the concepts in the study: the culture of the organization, employees' readiness for organizational change, and employees' resistance to organizational change as they related to CRM system implementation.

Theoretical Foundation

I used the innovation-decision process theory developed by Rogers (2003) as a theoretical framework. Rogers (2003) developed the innovation-decision process theory to explain the roles of change agents, owners, and the implementers as significant contributors to the success of the diffusion process. According to Rogers (2003),

innovation refers to innovation or practice that the individuals or an organization perceive as new. The innovation includes many objects such as opinion, technology, or knowledge (Rogers, 2003). The context in which Rogers developed the innovation-decision process theory provides frameworks for change implementation in social system and organization settings (Rogers, 2003). Specifically, Rogers (2003) provided a framework for the diffusion and adoption of innovation within social system and organizations. The theory serves as framework to study the implementation of an innovation in an organization.

The diffusion of the innovation is a process that includes several stages. Rogers (2003) assumed that the diffusion of the innovation is a process through which an innovation is communicated through communication channels over time among the individuals within a certain social system. The key assumption of the innovation-decision process theory is that individual's behavior change is a process that occurs overtime (Rogers, 2003). Rogers (2003) conceptualized five stages framework for the innovation-decision process:

1. Knowledge.
2. Persuasion.
3. Decision.
4. Implementation.
5. Confirmation.

The framework is useful for studying employees' behavior change over time regarding CRM system implementation. The innovation-decision process theory is instrumental to the study of employees' intention to use a new technology. The adoption

of innovation or technology refers to the users' decision to accept and use new technological tools, methods, and technique that were not utilized before to manage customers' relationship (Charles, Geoffrey, & Jose, 2014). According to Rogers (2003), the innovation-decision processes occurred at two levels: (a) at the individual level, and (b) at the organizational level. At the individual level, the decision to adopt an innovation is dependent on the role of an employee in implementation of the new technology, (Rogers, 2003). At organizational level, the innovation decision-making is considered as a process of innovation implementation based on the business environment, persuasive and decisive decisions, and the confirmation of the outcomes (Rogers, 2003). I applied the innovation-decision process theory at the individual level.

The innovation-decision process theory framework and the characteristics of the innovation are instrumental to the study of CRM system implementation. Researchers have used the innovation-decision process theory to provide explanation of the reasons why the extent to which individuals in an organization may create and adopt an innovation (Rogers, 2003). Researchers have extensively used the innovation-decision process theory in IT and information systems research (Lee, Tsao, & Chang, 2015). Researchers have utilized the innovation-decision process theory to investigate CRM system implementation (Debnath et al., 2016). For instance, Ko, Kim, Kim, and Woo (2008) used the diffusion of innovation-decision process theory to investigate the adoption of CRM systems. The authors used persuasion, decision, and implementation stages to describe the effect of a set of organizational variables that influence the diffusion of a CRM system based on Rogers's (2003) model. Law et al. (2013) used the

five characteristics of an innovation to examine CRM system implementation in service sectors.

Employees' characteristics may affect CRM system implementation. Abedin (2016) suggested that managers should take into account the characteristics of the adopters, the characteristics of the technology, and the business environment to assess the diffusion of new technology or innovation. Anand, Agarwal, Aggrawal, and Singh (2016) used the innovation decision process theory to investigate the adoption of innovation as three processes: creating product awareness process, product motivation process, and the adoption process. The adoption of innovation or technology refers to the individuals' decision to accept and use of new technological tools, methods, and technique that were not utilized before to manage customers' relationship (Charles et al., 2014). I viewed adoption of innovation as CRM system implementation and the characteristics of technology as the organizational factors influencing CRM system implementation.

The application of the innovation-decision process theory might not generate the desired outcomes as the theory has some limitations. One of the key limitations of the theory is recall problem as Rogers (2003) collected data from the respondents at one point in time, while he proposed that the diffusion process occur over time. Additional limitation is individual blame bias as Rogers assumed that the individuals are held accountable for their problems rather than the whole system. Another limitation is a preinnovation bias as the model is based on the assumption that all members in a social system must adopt the innovation (Rogers, 2003). Employees' attitudes toward CRM

system implementation and their perceptions of the benefits of CRM system implementation may limit the application of the theory.

In the application of the innovation-decision process theory to my study, I conceptualized Rogers's (2003) model as follows: knowledge step takes place when employees were exposed to a CRM system and understood how it functions. Persuasion stage takes place when employees develop favorable or unfavorable attitudes toward CRM system implementation. The decision step occurs when employees engage in activities that lead to a choice to implement or reject a CRM system. The implementation stage takes place when employees use a CRM system (Rogers, 2003). Finally, confirmation takes place when employees receive support for their decision to implement a CRM system, but they may reverse their decision if receive contradicted messages about CRM system implementation. The choice to adopt a CRM system represents the decision stage. I focused on the implementation stage.

The characteristics of the innovation might influence employees' acceptance of innovation. Rogers (2003) proposed five attributes of innovation that influence the adoption rate of innovation:

1. Relative advantage: The degree to which technology is perceived as a better method than the existing ones (Rogers, 2003).

2. Compatibility: The consistency of the technology with the values, past experience, and needs of the users (Rogers, 2003).

3. Complexity: The degree to which an innovation is difficult to understand and use (Rogers, 2003).

4. Trialability: The degree to which an innovation can be tried before a decision to adopt is made (Rogers, 2003).

5. Observability: The degree to which the innovation provides observable outcomes (Rogers, 2003).

Prior researchers, however, suggested that only relative advantage, compatibility, and complexity are consistently related to innovation adoption (Lee et al., 2015). I considered relative advantage as employees' readiness for CRM system implementation, compatibility as prerequisites for CRM system implementation, and complexity as employees' resistance to CRM system implementation. According to Rogers (2003), the benefits perceived by users of new technologies impact their adoption. If employees believe that CRM system implementation has perceived benefits, they may use it. I considered the relative advantage of innovation as employees' readiness for CRM system implementation. To implement CRM systems successfully, managers may need to establish readiness for CRM system implementation.

According to Lee et al. (2015), a high degree of compatibility results in acceptance of the innovation. When employees are capable of developing and integrating the essential resources, activities, and processes for CRM system implementation they are more likely to implement a CRM system successfully (Wang, Cavusoglu, & Deng, 2016). I defined compatibility as the prerequisite for CRM system implementation. If employees have the essential prerequisites for CRM system implementation, they may use CRM systems. Rogers (2003) defined the adoption rate as the pace of acceptance and use of an innovation by individuals in a social system. Rogers stated that complexity is the only

attribute that is negatively related to the adoption rate of innovation. CRM system implementation challenges employees to change their attitudes toward organizational change (Payne & Frow, 2006). Then, complexity can be viewed as an obstacle to adoption of an innovation. I defined complexity as employees' resistance to CRM system implementation. As explained before, employees' resistance to CRM system implementation is the main obstacle to a successful implementation (Crosdell et al., 2013).

Additionally, Rogers (2003) proposed that innovation, the type of the innovation-decision, and the nature of the social system affect the rate of adoption of the innovation. The social system includes the norms of the people in the system and the extent to which the interrelated communication channels influence the adoption rate of an innovation (Rogers, 2003). According to Rogers (2010), the structure of the social system can impede or facilitate the diffusion of innovation in a system. I defined the norms of the social system as the culture of the organization. The culture of the organization defines the shared beliefs and values of the people within an organization (Rahimi, 2014). Researchers have suggested that the culture of the organization can impede or facilitate CRM system implementation (Debnath et al., 2016; Iriana et al., 2013; Rahimi, 2014). Further, the culture of the organization influences employees' readiness for organizational change (Dhingra & Punia, 2016). Employees' readiness for organizational change influences employees' resistance to organizational change (McKay et al., 2013). It is reasonable to argue that the culture of the organization influences both employees' readiness for and resistance to CRM system implementation.

A core element of Rogers's (2003) innovation-decision process model is the innovation curve. In the innovation curve, Rogers explained how an individual decide whether to adopt or avoid an innovation. Rogers classified adopters of innovation into five categories: innovators, early adopters, early majority, late majority, and laggards based on their attitudes toward innovation. Innovators: represent the first individuals to adopt an innovation. Innovators tend to take risks (Rogers, 2003). Early adopters: represent opinion leaders who are careful in the adoption of innovation (Rogers, 2003). Early majority: the individuals who adopt an innovation but after a period of time (Rogers, 2003). Late majority: represent skeptic individuals about innovation (Rogers, 2003). Laggards: represent traditional individuals who prefer old methods (Rogers, 2003). According to Rogers, adopter categories classify members in a social system based on the degree of innovativeness. The late majority and the laggards can be viewed as the employees' groups that resist CRM system implementation. According to Siha, Bell, and Roebuck (2016), the age of innovation adopters influences the adoption rate. Employees' age may relate to their willingness to implement CRM systems.

The innovation curve may be a useful model to examine where customer service employees fall as users of innovation to determine if they tend to accept or resist CRM system implementation. Therefore, I analyzed Rogers's (2003) innovation-decision process model in relationship to CRM system implementation by customer service employees in the U.S. telecommunications industry. Specifically, I examined the effect of the culture of the organization, employee's readiness for CRM system implementation,

prerequisites for CRM system implementation, and gender on employee's resistance to CRM system implementation within the five adopter categories.

I developed a model for CRM system implementation that included the factors that facilitate or impede CRM system implementation. The contribution to the innovation-decision process theory may be extending the use of the theory by considering the decision of adoption of an innovation as a function of several organizational factors. Specifically, the contribution to the theory was examining the interrelationships among different elements of the theory. The basic assumption of the diffusion is that the potential adopters are heterogeneous (Rogers, 2003). A further contribution was that the theory can be applied in a heterogeneous population such as customer service employees in the U.S. telecommunications industry.

Literature Review

CRM system implementation is a form of organizational change that influences by several organizational factors. Researchers have defined organizational change as a process that leaders and managers designed to respond to a rapidly changing business environment to survive and thrive (Grama & Todericiu, 2016). Organizational change involves changes in business's structure, resources, technology, processes, and organizational culture (Grama & Todericiu, 2016; Imran, Rehman, Aslam, & Bilal, 2016). CRM system implementation may require changes in business process, technology, the culture of the organization, and people (Payne & Frow, 2006). Accordingly, managers may need to make adjustments to the business processes and the culture of the organization to ensure a successful CRM system implementation. In

addition, CRM system implementation requires evaluation of employees' readiness for organizational change (Charlie, Perry, & Loh, 2014). Managers may need to recognize the interrelationships among the factors that influence CRM system implementation. I focused on the interrelationships among organizational factors that influence CRM system implementation. Specifically, I focused on the interplay among employee's resistance to CRM system implementation, employee's readiness for CRM system implementation, the culture of the organization, prerequisites for CRM system implementation plus employee's age, and gender.

In order to clarify the concepts, I conducted an in-depth literature review on employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, and prerequisites for CRM system implementation. Further, I reviewed various aspects of the concept of a CRM system including the forms, benefits, and implementation models. I also discussed the different perspectives in the current research related to these concepts.

The Concept of CRM

Historical development of CRMs. The concept of a CRM is not a new concept; rather it is an old management concept (Payne & Frow, 2006). Originally, a CRM is associated with the relationship marketing field which concern with attracting, maintaining, and establishing a long-term relationship with customers (Battor & Battor, 2010). In the 1990s, researchers have described the concept of a CRM as a management approach that includes principles, concepts, and management tools (Debnath et al., 2016). The concept of a CRM system was first introduced in the mid-1990s in IT retailer and

practitioner community (Debnath et al., 2016). Since its introduction, management scholars and practitioners have become interested in a successful CRM system implementation (Akgün, İmamoğlu, Koçoğlu, İnce, & Keskin, 2014). Managers in different industries implement CRM systems to identify, attract, and maintain valuable customers (Brambilla & Dalmarco, 2014).

Definition of CRM Systems

Researchers who have investigated CRM system implementation provided numerous definitions to a CRM system. Scholars have shown that there is no precise definition of a CRM system because researchers and managers perceive it differently (Triznova, Maťova, Dvoracek, & Sadek, 2015). Researchers have proposed different conceptualizations of a CRM system. Tuleu (2015) suggested five perspectives and operationalization of a CRM system: (a) process perspective, (b) strategy perspective, (c) capability perspective, (d) philosophical perspective, and (e) technological perspective. Researchers approach CRM system implementation from each of these perspectives (Cambra-Fierro et al., 2017). For instance, researchers who have investigated CRM system implementation from a strategic approach emphasized the importance of establishing a portfolio of profitable customers. Researchers who have approached CRM system implementation as a philosophical perspective have emphasized customers' needs in the process of establishing valuable long-term relationships with customers (Tuleu, 2015).

Some researchers have defined a CRM system as a technology solution, while others defined it as data mining process (Triznova et al., 2015). Tuleu (2015) defined a

CRM system as a process of attracting, maintaining, and developing relationships with customers. Other researchers have defined a CRM system as a technological application built on relationship marketing philosophy (Brambilla & Dalmarco, 2014). Croasdell et al. (2013) defined a CRM system as a business strategy that involves IT to maintain customer interactions and establish valuable relationship with customers. According to Shaon and Rahman (2015), a CRM system is a key business strategy across many industries. Binsar Kristian and Panjaitan (2014) defined a CRM system as a philosophy and a business strategy supported by technology used to enhance interaction among members within a company. Another definition of a CRM system is an operational model in which employees understand and influence customers' behavior through interaction to attract new customers, keep old customers, and increase customer loyalty and profitability (Chung & Chen, 2016). Navimipour and Soltani (2016) defined a CRM system as a management method that managers use to identify, attract, develop, and maintain successful customer relationships over time to retain profitable customers. A comprehensive definition of a CRM system might encompass a combination of business process, strategy, capability, technology, and people.

Prior researchers have also considered a CRM system a combination of relationship management and IT (Ponduri & Suma, 2014). The information technology is important component in a CRM system as employees use it to maintain a good relationship with customers (Ponduri & Suma, 2014) and facilitate the interaction between employees and customers (Tuleu, 2015). Stuchlý, Virágh, Hallová, and Šilerová (2020) defined a CRM system as integration of people, systems, and processes to achieve

customer satisfaction. The multiple definitions of a CRM system may suggest a disagreement among scholars and practitioners. A lack of a unified definition of a CRM system might be the reason for lack of a comprehensive model for CRM system implementation.

The Forms of CRM Systems

Previous researchers have investigated different forms and areas of CRM systems (Buttle, 2009; Gohary & Hamzelu, 2016; Navimipour & Soltani, 2016). The main forms of CRM systems are:

1. Operational systems which are the systems that managers utilize for automation, and to enhance a CRM processes' efficiency. Automation means managing important business rules for the success of sales, marketing, and service using technologies instead of manual management (Buttle, 2009).
2. Analytical systems are the systems that the managers use to analyze customer-related data and knowledge (Navimipour & Soltani, 2016).
3. Collaborative systems are the systems that employees use to manage and integrate communication channels and customer interaction. The use of collaborative CRM systems facilitate employees' interactions with customers through all communication channels including personal communication, letter, fax, phone, the Internet, and email (Gohary & Hamzelu, 2016).

Gohary and Hamzelu (2016) identified four types of CRM systems: operational, analytical, collaborative, and electronic CRM systems (e-CRM). Debnath et al. (2016) identified five major areas researchers have investigated: marketing, services and support,

CRM, IT and information system (IS), and sales. Debnath et al. (2016) indicated that the areas of CRM system investigation include principles, models, and performance management. I focused on examining the relationship among the factors that facilitate or impede CRM system implementation. I conceptualized a CRM system as a management approach that integrates employee's readiness for CRM system implementation, the culture of the organization, prerequisites for CRM system implementation to achieve the benefits of CRM system implementation.

The Dimensions of CRM Systems

Understanding the dimensions of a CRM system may result into a successful CRM system implementation. Riadh and Bahri-Ammari (2014) described four dimensions of a CRM system: customer orientation, CRM organization, knowledge management, and CRM-based technology. Customer orientation refers to the mangers propensity to embark a CRM system (Riadh & Bahri-Ammari, 2014). According to Riadh and Bahri-Ammari (2014), customer orientation is a prerequisite for CRM system implementation. Managers use the CRM organization to develop valued relationships with key customers (Riadh & Bahri-Ammari, 2014). Customer-orientation is an essential precursor for competitive advantage and profitability (Abdullateef & Salleh, 2013). Further, a successful CRM system implementation involves transforming information about customers to customer knowledge (Yim, Anderson, & Swaminathan, 2004). To ensure a successful CRM system implementation, managers are required to share and disseminate customer knowledge throughout the company (Yim et al., 2004). Managers are also required to incorporate a latest technology into a CRM system (Yim et al., 2004).

Incorporating CRM-based technology enhances customer satisfaction, increases customer retention, and provides valuable long-term relationships with customers (Riadh & Bahri-Ammari, 2014; Yim et al., 2004). A successful CRM system implementation is dependent on the integration of the four dimensions (Yim et al., 2004). The dimensions of CRM systems could be prerequisites for a successful CRM system implementation.

The Benefits of CRM System Implementation

CRM system implementation has many benefits for organizations. In the 21st century, managers invest considerably in CRM systems because of the highly competitive markets (Duque, Varajão, Vitor, & Dominguez, 2013). Numerous researchers have investigated the benefits of CRM system implementation in various industries including hospitality industry (Maggon & Chaudhry, 2015; Rahimi and Gunlu, 2016; Riadh and Bahri-Ammari, 2014), telecommunications (Agbaje, 2014), banking (Marko, Dusica, Luka, & Zvonimir, 2015), public organizations (Duque et al., 2031) and education (Parris et al., 2016). Managers in different industries implement a CRM system to enhance competitive advantage.

Researchers who have examined CRM system implementation indicated that it generates a wide range of tangible and intangible benefits for organizations (Toma, 2016). According to Debnath et al. (2016), the key benefits of CRM system implementation are the following:

1. Increasing the number of valuable customers.
2. Improving communication with customers.
3. Increasing salesforce' productivity.

4. Enhancing pricing.

5. Enhancing a company' capability of providing customized products and services.

6. Improving customer service.

Other benefits of CRM system implementation include improving customer retention and loyalty, developing value for customers, and increasing customer-related profitability (Cheng & Yang, 2013). Addition benefits of CRM system implementation include attracting new customers and client segmentation, grouping customers based on similar needs or similar behavior (Marko et al., 2015). Segmentation means dividing customers into homogenous groups so that employees can address each group as a unique marketing customer (Buttle, 2009). Further, managers use CRM systems to provide immediate feedback to customers, analyze information about customers, and offer customized services (Josiassen, Assaf, & Cvelbar, 2014). In commercial businesses and banks, managers can achieve profitability through increased sales volumes and savings (Fouad & A-Goblan, 2017). In libraries, managers use CRM systems to achieve customer satisfaction; develop and improve the service, enhance and develop communication channels with customers, and increase customers' retention rate (Fouad & A-Goblan, 2017). In public organizations, managers implement CRM systems to improve the quality of information, improve services delivered to citizens, and enhance business's internal processes (Duque et al., 2013). In telecommunications organizations, the key benefits of CRM system implementation include enhancing communication with customers, increasing customer satisfaction and loyalty, and improving organizational efficiency and

effectiveness (Agbaje, 2014). The evidence suggests that CRM system implementation provides numerous benefits for various types of organizations.

CRM system implementation may positively impact employees. CRM system implementation is an effective method for motivating and rewarding employees (Toma, 2016). Managers also use CRM systems as a method for gathering feedback from employees to understand their expectations (Toma, 2016). Managers also use CRM systems as a method for training and developing more competent employees in sales, marketing, and customer service (Toma, 2016). Further, CRM systems provide training opportunities for employees to enhance their performance (Debnath et al., 2016; Toma, 2016). Despite the various benefits of CRM system implementation, managers are struggling to realize these benefits (Mohammed & Mohammad, 2015). In addition, managers encounter a high failure rate. The rate of CRM system implementation failure remains at a higher level in decades (Rahimi & Gunlu, 2016). In order to obtain the benefits of CRM system implementation, managers may need to have a better understanding of the interplay among the factors that facilitate or impede its implementation.

Reasons for Failure of CRM System Implementation

Researchers who investigated CRM system implementation reported different reasons for CRM system implementation failure. Numerous researchers have asserted that employees' resistance to CRM system implementation is the key reason for the failure of CRM system implementation (Croasdell et al., 2013; Frygell et al., 2017). Petouhoff (2006) cited that employees' resistance to CRM system implementation is the

main reason for unsuccessful CRM system implementation and loss of the benefits of CRM system implementation.

Another reason for CRM system implementation failure is that managers consider a CRM system as a technology initiative only (Payne & Frow, 2006). According to Mohammed and Mohammad (2015), managers in the telecommunications industry struggle to realize the benefits of CRM systems because they consider it as a technological solution rather than as a multidimensional concept. To accomplish the desired benefits of CRM system implementation, managers need to view it as a management strategy that involves integration of people and business procedures (Abrol, 2017). Accordingly, a comprehensive approach to CRM system implementation is crucial for realizing the potential benefits of CRM system implementation.

The high failure rate of CRM system implementation may indicate management inability to implement CRM systems successfully. According Bhat and Darzi (2016), the failure rate of CRM system implementation reached 70% of the total number of implementation initiatives. Furthermore, the results of a survey indicated that 70% of business organizations could not realize the outcomes of CRM system implementation (Pedron et al., 2016). The high failure rate of CRM system implementation questioned the ways managers use to manage CRM systems and the required cultural prerequisites for a successful CRM system implementation (Van Bentum & Stone, 2005). These findings suggested that managers continue to experience a high failure rate of CRM system implementation (Rahimi & Gunlu, 2016). Understanding the relationship among

the factors that influence CRM system implementation may enable managers to implement CRM systems successfully.

Another reason for CRM system implementation failure is that managers may have not clear understanding of the critical success factors (CSFs) for CRM system implementation (Frygell et al., 2017). The critical success factors refer to the important qualities for business growth and success (Al-Rashed, 2018). Customer knowledge management, technology, and clear vision of CRM system implementation are among the critical success factors (Al-Rashed, 2018). Although researchers have provided several reasons for CRM system failure, they have not prioritized these reasons.

The applications of a CRM system include different segments. Navimipour and Soltani (2016) conducted a systematic literature review to investigate the state of art mechanisms in CRM systems. The authors reviewed published articles from 2009 to 2015. Navimipour and Soltani (2016) argued that despite the importance of CRM system implementation, scholars may have not thoroughly analyzed the important components of CRM system. The components of CRM systems are e-CRM (electronic CRM system), knowledge management, data mining, data quality, and social CRM systems (Navimipour & Soltani, 2016). The electronic CRM system is a combination of concepts, tools, and processes that enable managers to capture the maximum value from e-business investment (Navimipour & Soltani, 2016). Recognizing the different components of a CRM system may help managers in understanding the factors that influence these components.

Managers use electronic CRM systems to contact customers, gather, store, and analyze customer data to create a clear view of customers (Yu, Nguyen, Han, Chen, & Li, 2015). Knowledge management refers to the managers' capacity to obtain the required knowledge about customers, improve, and share it with employees through communication channels to enhance employees' jobs (Navimipour & Soltani, 2016). Data mining is a process through which managers detect unidentified patterns and information from existing data (Navimipour & Soltani, 2016). Data quality is the degree of data accuracy, timeliness, completeness, and consistency (Navimipour & Soltani, 2016). Data mining is critical for the telecommunications industry because managers in this industry need to analyze big volume of customer data (Buttle, 2009). Managers in the telecommunications industry use data mining to predict trends and relationships in data of their customers; and to identify customer churn trends (Buttle, 2009). Understanding the different components of CRM systems may be crucial for realizing the potential benefits of CRM system implementation in the telecommunications industry. Finally, social CRM (SCRM) is an expansion of the traditional CRM system. Social CRM systems may increase customer retention and create customer loyalty. Understanding the different segments of a CRM system may help managers in designing appropriate implementation strategies.

Although Navimipour and Soltani (2016) provided an in-depth analysis of the current state of CRM systems, they focused mainly on the application of each technological aspect of a CRM system, and did not address the organizational factors that may enhance or impede a CRM system implementation. This evidence may suggest that

the current state of CRM system implementation research is incomplete. Researchers in the field of the CRM system may need to examine the factors that affect implementation of segments of a CRM system.

CRM System Implementation in Telecommunications Organizations

A successful CRM system implementation may contribute to customer retention and profitability in telecommunications organization. In the United States, telecommunications organizations offer a wide range of services including fixed and mobile voice, text, and data transmission to consumers and businesses including small businesses and government organizations (Sheffer, 2015). Managers in telecommunications organizations face a rapid technology evolution and intensive competition that forced them to implement CRM systems to minimize business operational costs (Esteys & Mendes-Moreira, 2016; Lu, Lin, Lu, & Zhang, 2014). Additionally, managers in telecommunications organizations realize that a CRM system is essential for maintaining business profitability and obtaining competitive advantage (Cheng & Yang, 2013; Esteys & Mendes-Moreira, 2016). Management of customer churn is an essential component of a CRM system. Kumar and Peterson (2012) noted that managers in telecommunications organizations may never win back 91% of the lost customers because of customer churn. Customer churn refers to customer switching from one service provider to another (Esteys & Mendes-Moreira, 2016). As a result, retaining existing customers is the best business strategy that managers in telecommunications organizations can use (Esteys & Mendes-Moreira, 2016). According to Lu et al. (2014), it is more profitable to retain the existing customers than attracting new customers. A

successful CRM system implementation may help managers in telecommunications organizations in increasing customer retention.

In addition, a successful CRM system implementation may reduce customer churn in telecommunications organizations. A successful implementation of a CRM system enables managers in telecommunications organizations to avoid customer churn (Esteys & Mendes-Moreira, 2016). Consequently, it is important for managers in telecommunications organizations to ensure customer satisfaction and maintain a long-term relationship with customers to keep a strong competitive advantage in the industry (Cheng &Yang, 2013). Managers in the telecommunications industry and other industries, however, have limited knowledge of the factors that influence a successful CRM system implementation (Mohammed & Mohammad, 2015). Researchers may need to investigate the factors that relate to a CRM system that affect customer satisfactions and loyalty to reduce customers switching.

To implement a CRM system successfully, managers have to consider technology, business process, and people in the organization. CRM system implementation is a complex process that encompasses three elements: people, process, and technology (Vijay Pal & Pooja, 2014). A successful CRM system implementation relies on the accurate balance between the three elements: people, process, and technology (Rigo, Pedron, Caldeira, de Araújo, & Cristina Silva, 2016). CRM system implementation involves adoption of IT (Debnath et al., 2016). IT encompasses various technologies that managers use to create, store, change, and utilize different types of information (Brambilla & Dalmarco, 2014). Managers utilize IT to improve a CRM

system through storing and managing big data to better understand customers (Debnath et al., 2016). IT components of CRM systems include front office applications and back-office applications (Navimipour & Soltani, 2016). Customer service employees use the front-office application to support service, sales, and marketing activities, while managers use the back-office applications to integrate and analyze customers' data (Navimipour & Soltani, 2016). Integration of technology, process, and people may increase the chance of a successful CRM system implementation.

Considering employees in CRM system implementation strategy is crucial for a successful implementation. Employees play a crucial role in the success or failure of organizational change because they are responsible for implementing organizational change (Shin, Taylor, & Seo, 2012). In addition, employees' attitudes toward organizational change are significantly impact organizational change implementation process (Cullen, Edwards, Casper, & Gue, 2013). As explained before, CRM system implementation is a form of organizational change. Therefore, employees' attitudes toward CRM system implementation may significantly affect its implementation process.

Models for CRM System Implementation

Scholars who have studied CRM system implementation may have not addressed the interrelationships among the factors that affect CRM system implementation. Prior researchers have proposed several models for CRM system implementation (Chung & Chen, 2016). One of these models is a five-stage model for CRM system implementation developed by Cheng and Yang (2013). The model can be applied in the telecommunications industry and other service industries including financial, consulting,

and airlines industry (Cheng &Yang, 2013). Cheng and Yang (2013) addressed the essential elements of a CRM system.

The five-stage CRM system implementation model includes the following:

1. Customer knowledge.
2. Customer interaction.
3. Customer perception.
4. Customer satisfaction.
5. Customer value.

Customer knowledge phase. The first step in CRM system implementation is building an accurate customers' databases (customer files) (Cheng & Yang, 2013). According to Cheng and Yang (2013), building customer database involves developing CRM information systems. The information system includes a knowledge management (KM) system which supports the implementation of all CRM systems processes (Cheng & Yang, 2013). The process of knowledge management involves collecting, organizing, storing, interpreting, distributing knowledge about customers to achieve the organization' mission (Buttle, 2009). The customer knowledge phase is crucial for meeting customers' needs and improving management processes. The focus of customer knowledge phase is the use of technology to create profiles for customers so that employees understand their needs and expectations (Cheng & Yang, 2013). Effective communication is critical to customer knowledge.

Customer interaction phase. The second step is the interaction with customers. Customers perceive value and service quality at the time they receive the service.

Employees play a critical role in CRM system implementation at this stage. According to Cheng and Yang (2013), empowerment of employees is significant in customer interaction phase. Empowerment means providing employees essential knowledge and skills to manage customers' relationships (Buttle, 2009). Rahimi and Gunlu (2016) suggested that empowerment of customer service employees is essential for a successful CRM system implementation. Employees can serve their customers more effectively and solve customers' problems efficiently if they receive sufficient training; improve their competencies and skills; and are authorized to display personal authority (Cheng & Yang, 2013).

Customer perception phase. The third step is customer perception. Customer perception of values refers to customers' responses and evaluations of the quality of the delivered products or services (Cheng & Yang, 2013). The perceived value refers to the perceived level of quality of the product /service compared to their costs (Cheng & Yang, 2013). The significance of customer perception is that customer satisfaction cannot be achieved unless customers perceived that they receive good products or services (Cheng & Yang, 2013). Customers' perception of the quality of products and services may contribute to customer satisfaction.

Customer satisfaction phase. The fourth step is customer satisfaction. Customer satisfaction may contribute to a successful CRM system implementation. Customer satisfaction represents the degree to which the service or the product meets customer s expectations (Cheng & Yang, 2013). Customer satisfaction measures how well an employee met a customer's expectations by a given transaction (Cheng & Yang, 2013).

According to Kumar (2017), customer satisfaction and loyalty represent the two main factors that reflect a successful CRM system implementation. Managers may need to prepare employees for CRM system implementation to enhance customer satisfaction.

Customer value phase. The fifth step is customer value. Customer value may reflect a successful CRM system implementation. Customer value refers to the benefits employees obtain from loyal customers (Cheng & Yang, 2013). The implementation of a CRM system enhances customer value and loyalty and increases revenues (Cheng & Yang, 2013). Cheng and Yang (2013) found that managers in telecommunications companies were able to implement customer knowledge effectively, but they were not able to implement customer interaction and customer value effectively. These results suggested that managers in the telecommunications industry need to pay more attention to a successful implementation of a CRM system.

In their model, Cheng and Yang (2013) did not include all the elements that influence CRM system implementation. Cheng and Yang may have not addressed people, the culture of the organization, and prerequisites for CRM system implementation. Although Cheng and Yang highlighted the stages of CRM system implementation, the authors focused mainly on the technological dimensions of CRM system implementation. Researchers have suggested that there is no a comprehensive model for CRM system implementation that integrates the factors that facilitate and inhibit CRM system implementation (Duque et al., 2013). Croasdell et al. (2013) argued that scholars may have not addressed the effect of the antecedents to employees' readiness for CRM system implementation on a successful implementation in the existing models for CRM system

implementation. To ensure a successful CRM system implementation, managers may need to consider the factors related to resistance to organizational change. Moreover, Abdulwahab and Ali (2013) recommended further investigation of the role of the culture of the organization in a successful CRM system implementation. As a result, it is important to investigate the effect of the culture of the organization, employee's readiness for CRM system implementation, and prerequisites for CRM system implementation on employee's resistance to CRM system implementation.

Moreover, numerous scholars who have investigated employees' acceptance and intention to utilize new information system technologies provided several models for CRM system implementation (Croasdell et al., 2013). One of these models is the technology acceptance model (TAM) developed by Davis (1989) (Charles et al., 2014). The purpose of developing TAM model was to test and apply the theory of reasoned action (TRA) to the information system adoption research (Charles et al., 2014). The key premise of the TAM model is that the perceived usefulness and perceived ease of use are determinants for an individual's intention to use a system (Charles et al., 2014). Although TAM is considered as the most empirically tested model, the model did not include the antecedent and the factors that facilitate the perceived usefulness and perceived ease of use (Charles et al., 2014). The term perceived ease of use refers to the extent to which an employee believes that using a specific system such as a CRM system would not require physical effort and intelligence (Navarro & Molina, 2016). Navarro and Molina defined perceived usefulness as the extent to which an employee believes that using a specific system such as a CRM system would improve his or her job performance. This evidence

may justify the need for investigating the factors affecting CRM system implementation that influence employees' attitudes toward CRM system implementation.

A successful CRM system implementation increases customer retention and loyalty. Agbaje (2014) carried out a survey and focus group discussion to study how managers in telecommunications companies use a CRM system to manage customers and to examine the effect of CRM system implementation on customer loyalty. The author employed a broad perspective of a CRM system that involves integration of people, process, and technology as a means to increase customer retention and satisfaction. The technology component of a CRM system involves collecting and analyzing data on customers' pattern, interpreting customer behaviors and developing predictive models (Rahimi, 2017).The people are critical to a successful CRM system implementation. The people component of a CRM system encompasses employees' readiness for organizational change and collaboration with staff (Rahimi, 2017). The processes related to CRM system implementation are strategies and processes that organization members need to understand and consider, and management support (Rahimi, 2017). Agbaje proposed that a higher level of good customer relationships yields a higher level of customer loyalty. The sample consisted of 140 employees from four telecommunications organizations in Nigeria. The author used variance analysis and regression method for data analysis. Agbaje found that CRM system implementation in telecommunications organizations increases customer loyalty, provides a better understanding of customers' needs and concerns, increases customer retention, and facilitates customer information collection and integration.

A successful CRM system implementation may result into customer satisfaction and loyalty. Binsar Kristian and Panjaitan (2014) investigated the relationship between CRM system implementation and customer satisfaction; and the relationship between customer satisfaction and customer loyalty. Binsar Kristian and Panjaitan (2014) revealed that CRM system implementation is significantly and positively affect customer loyalty and customer satisfaction. Laura and Mantas (2013) surveyed experts in CRM systems development and maintenance to evaluate the advantages and disadvantages of CRM system implementation in mobile telecommunications companies. Laura and Mantas suggested that developing customer satisfaction and loyalty are the major advantages of a successful CRM system implementation. A successful CRM system implementation implies achieving customer satisfaction and loyalty.

A successful CRM system implementation, however, requires specific organizational prerequisites. There are numerous organizational factors that affect CRM system implementation. Payne and Frow (2006) suggested that a successful CRM system implementation needs an integration of capabilities of the members in the organization, operations, and marketing capabilities through utilization of IT. According to Al-Rashed (2018), a successful CRM system implementation in telecommunications organizations requires identification and application of the CSFs. The CSFs may be considered prerequisites for a successful CRM system implementation.

A successful CRM system implementation may require addressing the factors that influence CRM systems implementation. Mohammed and Mohammad (2015) conducted a field study to explore the impact of a CRM system, customer knowledge, and social

rapport on a successful CRM system implementation. Mohammed and Mohammad argued that understanding the success factors for CRM system implementation is critical. Their purpose was to identify the factors that influence a successful CRM system implementation in the telecommunications industry. The authors employed an in-depth interview method for data collection. The participants were ten managers from different telecommunications companies in Bangladesh. The authors used convenient sampling strategy. The authors built their model on the resource-based view (RBV) theory. Mohammed and Mohammad found that the ease of access, employees' intention to maintain good relationships with customers, and employee interpersonal skills are important factors for a successful CRM system implementation. Finally, Mohammed and Mohammad found that prerequisites for a CRM system enhance business performance, improve CRM system implementation process, and help in achieving the desirable outcomes of CRM system implementation.

Another factor that influences CRM system implementation is the culture of the organization. The culture of the organization is a central theme in the academic research of organizational theory and management practice (Barbars, 2016) and researchers have recognized it as a critical determinant of organizational performance (Solkhe, 2013). The culture of the organization may influence employees' acceptance of CRM system implementation. Marko et al. (2015) found that the culture of the organization, employees, management support, communication channels, and integration of IT have both positive and negative impact on employees' acceptance of CRM system implementation. Marko et al. proposed a cause-effect relationship between these factors.

A successful CRM system implementation may require a better understanding of the relationship among employee's resistance to CRM system implementation, employee's readiness for CRM system implementation, the culture of the organization, and the prerequisites for CRM system implementation. In the following sections, I provided a thorough review of the literature on prerequisites for organizational change, resistance to organizational change, the culture of the organization, and readiness for organizational change as related to CRM system implementation.

Prerequisites for CRM System Implementation

Prerequisites for CRM system implementation may contribute to a successful CRM system implementation. Researchers have defined the capabilities for organizational change in different ways. Shafique et al. (2015) defined organizational capabilities as business processes, structures, and competencies essential for developing strategies for improving organizational performance. Newby, Nguyen, and, Waring (2014) indicated that organizational capabilities encompass employees' attitudes, the culture of the organization, employees' characteristics, and innovation capability and knowledge. In the context of CRM system implementation, Wang, Cavusoglu, and, Deng (2016) defined prerequisites for CRM system implementation as employees' capability to develop and integrate essential organizational resources, activities, and processes to manage customer relationships and create value for both organization and customers. Battor and Battor (2010) argued that an employee's capabilities to understand customers' needs and preferences, and to obtain and integrate the external knowledge are essential for CRM system implementation. Wang and Feng (2012) defined an employee's

capability as an ability to understand customers' needs, respond rapidly to customer needs, achieve customer satisfaction and customer loyalty, and improve overall business performance. This evidence may imply if employees possess the required prerequisites for CRM system implementation, they can use a CRM successfully. Managers may need to help employees in developing the essential prerequisites for CRM system implementation to ensure a successful CRM system implementation.

The literature on prerequisites for CRM system implementation showed different perspectives of prerequisites for CRM system implementation. According to Wang and Feng (2012), the essential prerequisites for CRM system implementation are customer interaction management, customer relationship upgrading, and customer win back capability. Herhausen and Schögel (2013) stated that customer relationship orientation, customer-centric management systems, relational information processes, and the CRM technology are the important prerequisites for CRM system implementation. Tuleu (2015) noted that the antecedents of CRM system prerequisites include interactive technologies, customer relationship orientation, and customer-centric management system. Interactive technologies are the methods and tools that employees use to engage in mediated communication to improve planning and exchange information (Tuleu, 2015). Customer relationship orientation is employees' tendency to implement a CRM system (Tuleu, 2015). A customer-centric management system is organizational structure and incentives that enable employees to build and retain customer relationships (Tuleu, 2015). Relational information processes refers to the processes that managers use to organize the use of customers information (Herhausen & Schögel, 2013). Scholars may

have not agreed on a specific set of prerequisites for CRM system implementation. The consequence of this situation might be a misunderstanding of the essential prerequisites for CRM system implementation.

The prerequisites for CRM system implementation may relate to employee's resistance to CRM system implementation. Addressing the essential employees' competencies for CRM system implementation is important because a lack of these competencies and qualifications may lead to employees' resistance to organizational change (Rao, 2015). Consequently, developing prerequisites for CRM system implementation may reduce employee's resistance to CRM system implementation.

Customer interaction management prerequisites. Customer interaction management skills may contribute to a successful CRM system implementation. Customer interaction management prerequisite refers to the skills and competencies that employees use to determine, attract, and maintain profitable customers (Wang & Feng, 2012). These skills might be crucial for achieving the purpose of CRM system implementation. The main purpose of CRM system implementation is to attract and retain loyal customers and obtain maximum benefits of CRM system implementation (Chung & Chen, 2016). In telecommunications organizations, customer retention is essential for generating higher revenues because retaining customers is less costly and more profitable than acquiring new customers (Kyoungok, Chi-Hyuk, & Jaewook, 2014). Successful customer retention implies retaining valuable customers (Buttle, 2009). In order to realize the desirable benefits of CRM system implementation, managers may require to assist employees in improving their customer interaction management skills.

Customer interaction management prerequisites may influence employees' performance. In the telecommunications organizations, employees with a high level of customer interaction management capability can use CRM systems successfully and, thus decrease switching costs of customers (Shafique et al., 2015). As a result, organizations can attract a large number of customers. Shafique et al. (2015) reported that employees with a high level of customer interaction management capability can implement a CRM system successfully and achieve a higher level of performance compared to those with a low level of customer interaction management capability. According to Shafique et al. managers can enhance customer interaction management capability through effective communication with customers via different communication channels. Managers may need to consider and develop customer interaction management capability as an essential prerequisite for a successful CRM system implementation.

Customer relationship upgrading capability. Customer relationship upgrading prerequisite is critical to a successful CRM system implementation. Customer relationship upgrading capability refers to the skills that employees utilize to up-sell additional expensive products or services and cross-sell additional products and services to the current customers using data analysis procedures effectively (Wang & Feng, 2012). Managers can measure customer relationship upgrading capability by up-selling and cross selling (Shafique et al., 2015). Cross-selling refers to employees' skills of increasing the value of an order by suggesting to customers additional products or services at the time of purchase (Wang & Feng, 2012). Customer relationship upgrading prerequisite is critical to a successful CRM system implementation.

Cross-selling and upselling skills influence the outcomes of CRM system implementation. According to Buttle (2009), effective cross-selling and up-selling capabilities increase organizations profitability and customer retention. The purpose of customer relationship upgrading capability is to increase customer satisfaction, retention, and customer loyalty (Shafique et al., 2015). Managers use upselling technique to convince customers to purchase more expensive product or service or upgrade on features of the product (Wang & Feng, 2012). In telecommunications organizations, both customer interaction management and customer upgrading prerequisites are crucial for improving organizational performance (Shafique et al., 2015). The purpose of CRM system implementation is to increase customer satisfaction, customer retention, and thus customer loyalty (Pedron et al., 2016). Arguably, customer relationship upgrading prerequisite relates to CRM system implementation.

Prerequisites for CRM system implementation (customer interaction management and customer relationship upgrading skills) are essential for obtaining the potential benefits of CRM system implementation. Shafique et al. (2015) studied the relationship between CRM system implementation and prerequisites for CRM system implementation (customer interaction management capability, customer relationship upgrading capability) and organizational performance in three telecommunications companies. Shafique et al. used a sample of 300 employees from telecommunications companies. The authors used a MLR to analyze the data. The authors found that customer interaction management and customer relationship upgrading prerequisites lead to an excellent

organization financial performance. Arguably, the two prerequisites for CRM system implementation relate to a successful CRM system implementation.

Cheng and Yang (2013) stated that prerequisites for CRM system implementation are indicators of a successful CRM system implementation. Nevertheless, the use of appropriate resources, efficient technology system, and effective knowledge management improve employees' prerequisites for CRM system implementation (Cheng & Yang, 2013). Likewise, Vakola (2014) argued that employees with high levels of confidence in their capabilities show high levels of readiness for change. This evidence suggests a relationship between prerequisites for CRM system implementation and employee's readiness for CRM system implementation. According to Newby et al. (2014), employees' capabilities impact their acceptance of CRM system implementation. Arguably, prerequisites for CRM system implementation (customer interaction management capability and customer relationship upgrading capability) influence employees' attitudes toward CRM system implementation.

Employees' Resistance to CRM System Implementation

Employees' resistance to organizational change may contribute to organizational change failure. Researchers have indicated that organizational change and employees' resistance to organizational change implementation are inevitable for organizations survival and growth (Caruth & Caruth, 2013; Dunican & Keaster, 2015). As explained before, managers implement organizational change to enhance and maintain business competitiveness (Teoh Kae & Rashad, 2015). Managers, however, face employees' resistance to change in the majority of organizational changes initiatives (Appelbaum et

al., 2015). Many management scholars have indicated that employees' resistance to organizational change is a major obstacle to a successful organizational change implementation (Bourne, 2015; Sofat, Kiran, & Kaushik, 2015; Vakola, 2013). I considered employees' resistance to organizational change as employee's resistance to CRM system implementation and the main reason for unsuccessful CRM system implementation.

Definition of employee's resistance to CRM system implementation. The concept of resistance to organizational change has multiple definitions in the current literature. Garcia-Cabrera and Garcia-Barba Hernandez (2014) defined employees' resistance to organizational change as a psychological state that influences the success of organizational change. Grama and Todericiu (2016) defined employees' resistance to organizational change as any opposition to organizational change in certain situations. McKay et al. (2013) defined resistance to organizational change as a state of maintaining any attitudes or behaviors that impede the achievement of the desired outcomes of organizational change. Oreg (2006) defined resistance to organizational change as employees' reactions against organizational change initiative. Đurišić-Bojanović (2016) classified employees' reactions to organizational change as openness to organizational change and rejection of organizational change. Ujhelyi, Barizsné, and, Kun (2015) stated that employees' reactions to organizational change include commitment, involvement, support, passive resistance, active resistance, and aggressive resistance. Management scholars may have not agreed on a unified definition of employees' resistance to organizational change, which may lead to a misunderstanding of the concept.

Types of employee's resistance to CRM system implementation. Employees' resistance to organizational change can be manifested in different forms. Piderit (2000) conceptualized the concept of resistance to organizational change as a three-dimensional concept. The three dimensions are cognitive attitudes, emotional attitudes, and intentional attitudes toward organizational change (Piderit, 2000). Employees' cognitive attitudes toward organizational change refer to employees' thoughts (cognition) about organizational change based on the available knowledge (Giauque, 2015). Employees' emotional attitudes (affective) are employees reaction to organizational change, and employees' behavioral attitudes are employees' actions toward organizational change initiative (behavioral tendency) (Giauque, 2015). Chung, Su, and Su (2012) defined behavioral tendency as employees' actions or intention to react to organizational change. I defined employee's resistance to CRM system implementation as employee's affective resistance and behavioral resistance to CRM system implementation.

Employee's resistance to CRM system implementation may relate to the employee's characteristics. Piderit (2000) described the cognitive resistance as employees' negative interpretation of organizational change. The emotional resistance refers to employees' negative feelings about organizational change such as anxiety and fear (Piderit, 2000). Employees' behavioral resistance to organizational change is employees' action against the organizational change (Malik & Masood, 2015). According to Oreg (2006), considering resistance to change as a multidimensional concept may help in recognizing the interaction between resistance to change and its antecedents. I examined employee's affective and behavioral resistance to CRM system

implementation. Understanding the different types of employee's resistance to organizational change may help managers in developing strategies for dealing with every type of employee's resistance to CRM system implementation.

Sources of employee's resistance to CRM system implementation. Employees' resistance to organizational change originates from different sources. Ujhelyi et al. (2015) analyzed the sources of employees' resistance to organizational change. Ujhelyi et al. surveyed leaders about employees' attitudes toward organizational change. The authors argued that employees' resistance to organizational change depends on the type of organizational change. Ujhelyi et al. classified sources of employees' resistance to organizational change as individual and organizational resources. The sources of employees' resistance to organizational change include the following: (a) preference of employees, (b) demand of security, (c) financial concerns, (d) anxiety of uncertainty, (e) insufficient information about the target organizational change, and (f) fear of unsuccessful experience (Ujhelyi et al., 2015). In a similar vein, Teoh Kae and Rashad (2015) described five key reasons for employees' resistance to organizational change. The reasons are fear of uncertainty, mistrust of leaders, loss of job control, inconvenient time for organizational change implementation, and employees' predisposition toward organizational change (Teoh Kae & Rashad, 2015). Understanding the sources of employees' resistance to organizational change implementation, may assist managers in designing appropriate strategies for overcoming employee's resistance to CRM system implementation.

Employees' attitudes toward CRM system implementation are the main reasons for employee's resistance to CRM system implementation. According to Piderit (2000), employees' attitudes toward organizational change are precursors for employees' resistance to organizational change. The aassessment of the types of employees' resistance to organizational change is important for developing appropriate strategies for reducing employees' resistance to organizational change (Crouzet, Parker, & Pathak, 2014). Managers have to consider employees' attitudes toward CRM system implementation before its implementation.

Further, employees' resistance to organizational change negatively impacts CRM system implementation. Vakola (2013) explained that employees' reactions to organizational change play a major role in change success. Turgut, Michel, Rothenhöfer, and Sonntag (2016) argued that employees' reactions to organizational change vary among employees because of individual dispositions. Oreg (2006) stated that dispositional resistance to organizational change indicates an employee's tendency to resist or avoid organizational changes implementation, underestimate organizational change, and seek opponents of organizational change in different organizational change contexts and forms. Consequently, dispositional resistance may result in spreading of resistance among other members in the organization. Vakola (2013) explained that employees' beliefs and perceptions of readiness for organizational change influence their acceptance of organizational change implementation. It is reasonable to argue that employee's readiness for CRM system implementation influences employee's resistance to CRM system implementation and affects CRM system implementation.

Reasons for employee's resistance to CRM system implementation.

Employees resist organizational change for numerous reasons. Crouzet et al. (2014) mentioned that negative outcomes of organizational change such as job loss, loss of monetary benefits, and loss of social harmonization within organizations are the reason for employees' resistance to organizational change. Crouzet et al. (2014) also noted that employees' perception of characteristics of managers impact their acceptance of organizational change initiative. According to Grama and Todericiu (2016), employees' perceptions of managers' competency, support, and integrity are significantly influence employees' acceptance of organizational change. In order to avoid employee's resistance to CRM system implementation, managers may need to support employees and manage the implementation process successfully.

Employee's resistance to CRM system implementation and communication.

The nature of communication within organizations may affect employee's resistance to CRM system implementation. Duque et al. (2013) proposed that effective communication is a critical success factor for CRM system implementation. Simoes and Esposito (2014) studied the impact of communication on employees' resistance to organizational change in two large pharmaceutical companies in Brazil. The authors employed a mix method research using semi-structured interviews and questionnaires to explore leaders and managers' viewpoints regarding the nature of communication during organizational change. Simoes and Esposito found that effective communication minimizes employees' resistance to organizational change and is critical to a successful organizational change. In addition, effective communication enhances employees' readiness for organizational

change, minimizes uncertainty, and increases employees' commitment (Simoes & Esposito, 2014). Simoes and Esposito recommended a quantitative research to examine the effect of communication on employees' resistance to organizational change during a large-scale organizational change. Managers may develop effective communication channels with employees during CRM system implementation to minimize employee's resistance to its implementation.

In a similar vein, Akan, Er Ülker, and Ünsar (2016) carried out a cross-sectional study to examine the effect of organizational communication on employees' resistance to organizational change. The authors used a sample composed of 406 employees from public and private banks in Turkey. Akan et al. found a significant positive relationship between employees' resistance to organizational change and organizational communication. Their purpose was to introduce the way through which effective communication within an organization influences employee's resistance to organizational change. Employees' resistance to organizational change influences both communication within organizations and communication with external stakeholders. Effective communication may increase employee's readiness for CRM system implementation and reduce employee's resistance to CRM system implementation. According to Akan et al., to ensure a successful CRM system implementation, managers should develop and maintain good communication with employees.

Impact of employee's resistance to organization change on CRM system implementation. Employees' resistance to organizational change is critical because it may affect an organization's long-term competitive advantage (Huang, 2015). In a cross-

sectional study, Garcia-Cabrera and Garcia-Barba Hernandez (2014) analyzed three types of employees' resistance to organizational change: cognitive, emotional, and behavioral resistance. The authors used a sample of 143 employees from seven organizations experienced different structural changes in Spain. Garcia-Cabrera and Garcia-Barba Hernandez found that employees' cognitive, emotion, and behavioral resistance to organizational change have different antecedents related to organizational change contexts. The organizational change contexts include employees' participation in organizational change process, communication, and the perceived benefits (Garcia-Cabrera & Garcia-Barba Hernandez, 2014). Garcia-Cabrera and Garcia-Barba Hernandez revealed that communication and employee participation are negatively related to the cognitive (thinking) and emotional (feelings) resistance to organizational change, while the perceived benefits and the social relationships within organizations are negatively related to the emotional (feelings) resistance. Garcia-Cabrera and Garcia-Barba Hernandez also found that the perceived benefits of organizational change such as job security, employees' active participation, and effective communication reduce the three form of employees' resistance to organizational change. Different organizational factors might play essential role in reducing employee's resistance to CRM system implementation.

Managers can use different strategies to reduce employee's resistance to CRM system implementation. Crouzet et al. (2014) described some strategies for overcoming employees' resistance to organizational change. These strategies include employees' participation in organizational change initiatives, developing a clear vision for

organizational change, and establishing effective communication channels with employees (Crouzet et al., 2014). Thus, managers can increase employees' acceptance of CRM system implementation by considering these strategies to reduce their resistance to CRM system implementation.

The type of relationship within organizations can influence employees' resistance to CRM system implementation. In a cross-sectional study, Giauque (2015) explored social and organizational antecedents to employees' positive attitudes toward change (PATC). The author surveyed 720 mid-level managers working in Swiss public hospitals who experienced transformational change. Giauque found that the perceived social support such as employees' work relationships with supervisors and peers, perceived organizational support, employee participation, availability of the required information, and communication have a strong positive association with the PATC. Giauque, however, provided different antecedents of employees' resistance to organizational change from a managerial perspective rather than from frontline employees' perspective.

Likewise, Straatmann, Kohnke, Hattrup, and Mueller (2016) conducted a cross-sectional study to investigate the relationship between change management variables and employees' reactions to change. A total of 240 employees from an international merger project in Australia were participated in the study. The authors proposed a theory-based framework for organizational change design. Straatmann et al. found that the culture of the organization and employees' attitudes toward organizational change are significant predictors of employees' intention to engage in organizational change process. This evidence may suggest that the culture of the organization is antecedent to employees'

resistance to organizational change, and that the culture of the organization influences employees' resistance to CRM system implementation.

In a longitudinal study, Vakola (2016) analyzed employees' behavioral reactions to organizational change and the reasons for employees support or resistance to a large-scale organizational change. A sample of 146 employees from a large bank in Greece participated in the study. The results revealed that the expected benefits associated with organizational change are related to employees' positive reactions to change, and these reactions maintained positive because of managerial support. The results also showed that active communication and managerial support minimize employees' resistance to change. The key strength of that study was the use of the longitudinal research design that enabled the researchers to investigate the evolution of employees' reactions to change. Managers might need to take into account that if they do not handle employee's resistance to CRM system implementation successfully, this attitude may develop over time and can lead to unsuccessful CRM system implementation.

In another longitudinal study, Jones and Van de Ven (2016) investigated the relationship between employees' resistance to organizational change and its consequences, and whether it strength or weaken over time. The authors found that employees' resistance to organizational change is negatively related to employees' organizational commitment and organizational effectiveness over time. Jones and Van de Ven found that supportive leadership reduces resistance to organizational change. Arguably, employees' resistance to organizational change may affect organizational change long-term objectives and future organizational change initiatives. Employees'

resistance to CRM system implementation may affect future organizational change initiatives.

Employees' behavioral reaction to CRM system can take different forms. Vakola (2016) suggested that employees' behavioral reaction to organizational change can be identified as active support, passive support, active resistance, and passive resistance. Each response to organizational change can manifest in a specific set of behaviors. Vakola suggested that employees create reasons to justify the adoption of a specific reaction. According to Vakola, the main reasons behind active support are related to open communication, supervisors' support, trust in management, and employees' positive attitudes toward change. On the contrary, the main reasons behind the active resistance to organizational change include a high-cost and low perceived benefit of organizational change initiative, a lower degree of confidence to succeed, a lack of training, and a lack of trust in managers (Vakola, 2016). To minimize employee's resistance to CRM system implementation, managers should foster mutual trust with employees to enhance employees' positive attitudes toward CRM system implementation.

Additionally, Vakola (2016) highlighted the evolution of employees' reactions to change which may affect change management and implementation. Understanding the reasons behind employees' responses to organizational change can help managers in addressing these factors effectively. The key limitation of this research was that the author did not explain the ways through which these reasons can be handled. Thus, in order to ensure a successful CRM system implementation, managers have to consider employees' readiness for organizational change and open culture of the organization.

Dunican and Keaster's (2015) findings aligned with Vakola's (2016) findings in different ways. First, healthy relationships in workplace, strong commitment, and employees' positive morale facilitate organizational change. Furthermore, a better understanding of organizational change increases employees' acceptance of organizational change even during uncertainty. Finally, Dunican and Keaster highlighted the significance of evaluation of employees' attitudes toward organizational change. Evaluation of employees' attitudes toward CRM system implementation might assist managers in creating an open culture of the organization and readiness for organizational change to foster positive attitudes toward CRM system implementation.

Employees' resistance to organizational change has detrimental effects on organizational change initiative. According to Grama and Todericiu (2016), employees' resistance to organizational change is associated with negative attitudes or counterproductive behaviors such as cynicism. Grama and Todericiu defined organizational cynicism as employees' negative attitudes toward organizations. Cynicism is an indicator of employees' resistance to organizational change and reflects employees' mistrust in leaders of organizational change initiatives. According to Grama and Todericiu, managers have to support employees during CRM system implementation process to overcome employees' resistance to CRM system implementation and prevent organizational cynicism.

In contrast, employees' resistance to organizational change may positively impact organizational change implementation. Appelbaum et al. (2015) viewed employees' resistance to organizational change as an opportunity for improvement of organizations.

Appelbaum et al. considered employees' resistance to organizational change as an effective feedback method that managers can use to manage the real and perceived success of organizational change initiative at all stages of organizational change effort. Similarly, Mathews and Linski (2016) argued that employees' resistance to organizational change is beneficial for employees as it reflects employees' expression of their thoughts. This evidence might imply that employee's resistance to CRM system implementation because of a lack of human resource development initiatives.

Factors that influence employee's resistance to CRM system implementation. Many organizational factors may influence employees' resistance to CRM system implementation. Lines, Sullivan, Smithwick, and Mischung (2015) analyzed the impact of factors related to change management process on employees' resistance to organizational change in sixteen organizations in architecture, engineering, and construction industry in the United States and Canada. Lines et al. collected data by observations. Lines et al. found that employees resist organizational change regardless the scope of organizational change initiatives. Lines et al. reported that employees resist large and medium-size organizational change efforts than small organizational change initiatives. Lines et al. also found that employees' involvement in organizational change implementation process reduces employees' resistance to organizational change. Further investigation is required to quantify the impact of resistance to change on organizational change initiative. In the context of CRM system implementation, employee's resistance to CRM system is identified as the main reason for CRM system implementation failure, but researchers may have not quantified its impact.

Impact of employee's resistance to CRM system implementation. Employees' resistance to organizational change is the key reason for the failure of CRM system implementation (Vijay Pal, & Pooja, 2014). Laura and Mantas (2013) confirmed that employees' resistance to IT implementation prevents a successful CRM system implementation. Employees resist CRM system implementation for many reasons. The reasons include the challenge and stress resulting from organizational change, the different or new system requirements, and changes in work practices and inter-personal relationships (Petouhoff, 2006). Giauque (2015) asserted that employees resist organizational change initiatives because of a high level of pressure and stress results from continual organizational change, insufficient information about change process, and a lack of organizational support. Thus, when designing a model for a successful CRM system implementation, scholars have to not neglect employee's resistance to organizational change and the underlying causes of it.

Employee's age, gender, and resistance to CRM system implementation. Employee's age and gender may influence their resistance to CRM system implementation. Pakdel (2016) conducted a study to examine the effect of demographic variables age and gender on employees' resistance to organizational change. Pakdel employed both a field study and a questionnaire to collect data from employees working in a government organization in Khorasan Razavi, Iran. Pakdel found that employees' age and gender have no significant impact on employees' resistance to organizational change. The evidence implies that there is no difference between men and females regarding resistance to organizational change. This evidence may suggest that

employees' age and gender are not related to employee's resistance to CRM system implementation. Cropley and Cropley (2017) conducted a survey in an Australian manufacturing firm to examine the relationships among employees' innovation capability, the culture of the organization, and gender. Cropley and Cropley found that there is no difference between female and male employees regarding innovation capability. The authors also found that unsupportive culture of the organization impacts female employees' capacity for innovation. Managers may need to recognize that the culture of the organization may cause female employee's resistance to CRM system implementation.

The Culture of the Organization

Scholars in management literature have provided numerous definitions of the concept of the culture of the organization. Dwivedi et al. defined the culture of the organization as shared beliefs, values, and assumptions underlying communication in organization. Iriana et al. (2013) defined the culture of the organization as a core business strategy that integrates internal processes and functions and external networks to create and deliver value to profitable customers. Dhingra and Punia (2016); Rahimi (2014) defined the culture of the organization as shared beliefs and values of the people within an organization (Rahimi, 2014). Solkhe (2013) noted that inclusion of multiple layers and dimensions, and the significance of the shared meaning are among the common characteristics of the different definitions of the culture of the organization. These literatures suggested that researchers have investigated and conceptualized the culture of the organization in different contexts and at different levels.

Researchers have used several terms in the context of the culture of the organization. Dwivedi et al. (2014) noted that values, beliefs, ethos, climate, and culture are among the terms of the culture of the organization. Limb (1995) suggested that the concept of the culture of the organization composes of multiple levels. According to Rabindra et al. (2017), the first level of the culture of the organization is the values that distinguish an organization from other organizations. The values of the culture of the organization represent the ethos of people in organizations (Dwivedi et al., 2014). The second level of the culture of the organization is a climate which refers to the accepted characteristics that an organization's members follow (Dwivedi et al., 2014). The third level is organizational atmosphere that influences the entire organization (Rabindra et al., 2017). The values of the culture of the organization are the most significant level because it represents the identity of an organization and constitutes shared meaning in the organization (Rabindra et al., 2017). I examined the values of the culture of the organization.

Pareek (2002) proposed that the culture of the organization is built on eight values of ethos: openness, confrontation, trust, autonomy, pro-action, authenticity, collaboration, and experimentation (OCTAPACE). According to Pareek (2002), ethos is the underlying spirit of an individual or a group of people and the core of the culture. Arguably, ethos is the core element of the culture of the organization. I studied the OCTAPACE cultural values for several reasons. First, since the eight cultural values constitute the spirt of the culture they may shape other levels of the culture of the organization. Second, the eight cultural values promote effective communication and increase employees' involvement

in organizational change process (Jain et al., 2014). I proposed that these factors are essential for a successful CRM system implementation as they may minimize employee's resistance to CRM system implementation. Third, the eight cultural values promote open culture and innovation (Neelam et al., 2015) which are important for CRM system implementation. Nguyen (2009) noted that the culture of the organization encompasses characteristics of an organization's members and degree of openness to organizational change. The degree of openness to organizational change is critical to a successful organizational change implementation. Further, the OCTAPACE cultural values are related to employees' readiness for organizational change (Dhingra & Punia, 2016) which is a precursor to employees' resistance to organizational change (Piderit, 2000). Arguably, OCTAPACE cultural values influence employee's readiness for CRM system implementation and employee's resistance to CRM system implementation.

The culture of the organization and CRM system implementation. The culture of the organization influences CRM system implementation. Numerous scholars have extensively emphasized the impact of the culture of the organization on CRM system implementation (Iriana et al., 2013; Rahimi, 2014, Rahimi & Gunlu, 2016). According to Rahimi (2014), the culture of the organization is one of the most important factors that can enable or disable the achievement of the desirable outcomes of CRM system implementation.

The culture of the organization impacts realization of the benefits of CRM system implementation. Iriana et al. (2013) surveyed 99 organizations implemented CRM systems to examine the effect of the culture of the organization on the outcomes of CRM

system implementation. Their purpose was to examine whether the culture of the organization influences the financial outcomes of CRM system implementation. The authors found a significant positive effect of the culture of the organizational on the financial outcomes. The authors argued that achieving financial outcomes require changes in leadership approaches to emphasize creativity and innovation. Iriana et al. stated that the interaction among people involvement, processes, and technologies influences the outcome of CRM system implementation. Since the culture of the organization has a direct effect on the key benefit of CRM system implementation, scholars might need to integrate the culture of the organization into a CRM system implementation model.

The culture of the organization not only influences the financial outcomes, but also influences employees' competency, and in turn their performance. Parris et al. (2016) conducted a case study to explore the impact of the culture of the organization on CRM system implementation. Parris et al. interviewed four full-time athletic department administrators at Arizona State University (ASU). The authors used the institutional theory and stakeholder theory as a theoretical base. The authors found that the key challenges for CRM system implementation are coordination, obtaining employees' commitment and developing essential competency for CRM system implementation. Parris et al. also found that the culture of the organization affects CRM system implementation because it impacts information processes and employees' motivation to accept CRM system implementation. Thus, the culture of the organization can have a negative or a positive impact on CRM system implementation.

The type of the culture of the organization may positively or negatively impact CRM system implementation. The type of culture of the organization can enable or impede realizing the desirable outcomes of CRM system implementation (Rahimi & Gunlu, 2016). In a case study, Rahimi and Gunlu examined the impact of the culture of the organization on CRM system implementation in the hotel industry in the UK. The authors surveyed 346 managers of a chain hotel in the UK. The authors used Denison Organizational Culture Survey and the Mendoza CRM model as research instruments. The Denison model involves four cultural dimensions: involvement, consistency, mission, and adaptability (Rahimi & Gunlu, 2016). The Mendoza model encompasses three components of CRM system: people, process, and technology. Rahimi (2017) and Rahimi and Gunlu found that the culture of the organization is positively associated with the three elements of CRM system implementation. Rahimi and Rahimi and Gunlu identified the culture of teamwork, employees' attitudes toward organizational change, and a higher level of innovation are among the main predictors of a successful CRM system implementation. Rahimi and Gunlu, however, may not have identified organizational factors related to people. Managers may need to develop a productive culture of the organization to reduce employee's resistance to CRM system implementation.

Further, Rahimi and Gunlu (2016) reported that CRM system implementation requires changes in employees' attitudes, business processes, and the culture of the organization to increase employees' acceptance of CRM system implementation. The culture of the organization may positively influence employees' attitudes toward CRM

system implementation. Managers may need to modify the culture of their organizations to increase employees' acceptance of CRM system implementation.

Creating a culture of honesty and trust is essential for CRM system implementation. Triznova et al. (2015) conducted an exploratory theoretical research to examine the current approaches of CRM systems characteristics. Triznova et al. revealed that developing an honest and transparent culture of the organization supported by a well-defined process and technologies is essential for a successful CRM system implementation. Managers have to consider the people in the organization and the culture of the organization when implementing a CRM system.

More specifically, the culture of the organization influences employees' resistance to organizational change. Latta (2015) reviewed the literature on resistance and receptivity to organizational change. The author aimed to provide a theoretical framework for understanding employees' resistance to organizational change and the factors that facilitate organizational change as it related to the culture of the organization. Latta considered any factor that can reduce employees' resistance to organizational change can facilitate organizational change. Additionally, Latta argued that scholars may have not addressed how the organizational culture facilitates organizational change. Management researchers may need to examine the ways through which the culture of the organization can facilitate CRM system implementation. I examined the relationship among the culture of the organization, other organizational factors, and employee's resistance to CRM system implementation.

The OCTAPACE values of the culture of the organization. Numerous researchers have further studied the role of the cultural values on CRM system implementation. The values of the culture of the organization represent the underlying meaning and the interrelations through which the pattern of behaviors of organization members' can be explained (Limb, 1995). According to Pareek (2002), the culture of openness, confrontation, trust, autonomy, pro-action, authenticity, collaboration, and experimentation is crucial for organizational change implementation. The values of the culture of the organization may influence employees' behavior regarding CRM system implementation. I focused mainly on the culture of the organization in terms of openness, confrontation, trust, autonomy, pro-action, authenticity, collaboration, and experimentation values.

Openness refers to the extent to which managers allow employees to communicate their opinions, ideas, feelings, and activities (Solkhe, 2013) employees are inclined to take risks, and encouraged to use new ideas and novel ways for performing their jobs (Prakash, 2015). Openness is critical to CRM system implementation. If the culture of the organization is open to and accepts challenging ideas and activities, it implies readiness for CRM system implementation (Nguyen, 2009). In contrast, employees in a traditional, inflexible organizational culture are unlikely to accept organizational change (Nguyen, 2009). Thus, in an open culture of the organization, employees are more likely to accept CRM system implementation. Confrontation refers to the level to which employees are empowered to take up challenges, solve problems, and confront similar circumstances (Solkhe, 2013). Confrontation means that

employees are able to face any problems or issues directly and work together to resolve them (Neena, Ajay, Sanjay, & Neelam, 2016). Employee's resistance to CRM system implementation may decrease if employees are encouraged to face implementation problems.

Trust refers to the level of a reciprocal trust between managers and employees (Solkhe, 2013). Trust means the extent to which employees keep confidentiality of information they share with other employees and not misuse it (Neena et al., 2016). When employees feel they are trusted they can reciprocate commitments and trust (Solkhe, 2013). Authenticity refers to consistency in interaction and expression of feelings (Solkhe, 2013). Authenticity means that employees can acknowledge their work-related mistakes and honestly share their feelings (Neena et al., 2016). Authenticity may improve communication during CRM system implementation and, in turn, minimize employee's resistance to CRM system implementation. Pro-action refers to the level to which employees are inclined to plan and take initiatives (Neena et al., 2016). Pro-action also implies that employees can predict an issue in advance and react to future situations (Neena et al., 2016). If employees are motivated to take action at immediate problems or issues, they may feel confident and, thus, reduce their resistance to CRM system implementation. Autonomy refers to employees' willingness to utilize power without fear and to enable others to do so (Neena et al., 2016). Autonomy reflects effective delegation of authority to employees (Neena et al., 2016). If employees have the freedom to plan and act without fear, this may reduce employee's resistance to CRM system implementation. Collaboration refers to providing help and accepting help from organization members

Solkhe, 2013). Collaboration is the degree to which employees work together and exchange competency and resources to accomplish their work (Neena et al., 2016). Further, collaboration promotes the spirt of teamwork as employees can discuss problems with others in a team; and develop and implement action plans (Neena et al., 2016). Sharing resources and skills may reduce employee's resistance to CRM system implementation. Experimentation refers to the extent to which employees are encouraged to generate new ideas or ways to solve problems (Neelam et al., 2015). This means that employees are encouraged to try out new ways to deal with complex work-related problems in organizations (Neena et al., 2016; Prakash, 2015). Innovation may reduce employees' resistance to CRM system implementation.

Numerous scholars have studied the effect of the OCTAPACE cultural values on organizational change efforts. Dhingra and Punia (2016) examined the relationship between the culture of the organization and employees' readiness for organizational change. Dhingra and Punia surveyed 510 employees in manufacturing and service companies in India. Their purpose was to examine the impact of the culture of the organization on employees' readiness for organizational change. The results indicated a significant correlation among the OCTAPACE cultural values and employees' readiness for organizational change. Dhingra and Punia found that openness and confrontation were significant predictors for employees' readiness for organizational change, while trust, authenticity, proactive, autonomy, collaboration, and experimentation were not significant predictors. Neelam et al. however, recommended that managers have to foster the value of openness, confrontation, as well as trust, authenticity, pro-action, and

autonomy. Dhingra and Punia recommended further investigation of organizational factors that may affect employees' readiness for organizational changed. Managers may need to prepare employees for CRM system implementation before implementation to increase chances for a successful CRM system implementation. Managers may also promote OCTAPACE cultural values to increase employees' acceptance of CRM system implementation.

The OCTAPACE cultural values may help managers in responding effectively to various organizational challenges. Solkhe (2013) argued that the OCTAPACE cultural concern with the extent to which managers promote these values in an organization. Jain et al. (2014) carried out a survey to examine the significance of the OCTAPACE cultural values in organization. The participants were 252 employees from a big bank in India. Jain et al. found that not all cultural values are significantly important in an organization.

The OCTAPACE cultural values may not all equally significant, but may correlate. Neelam et al. (2015) conducted a survey study to investigate the eight cultural values of OCTAPACE model that influence the culture of the organization and to examine the correlation between pairs of the eight cultural values. The authors found that the most significant cultural values among employees were pro-action, trust, openness, and experimentation. Similarly, Solkhe (2013) studied three insurance organizations to identify and measure the cultural values and the overall level of prevalence of these values in organizations. The author found significant differences on the eight OCTAPACE cultural values and significant correlation among many of the OCTAPACE cultural values. The participants were 73 employees ranging from executives to sales

managers in the three organizations. Solkhe conducted correlation analysis to examine the relationships among the OCTAPACE cultural values. The OCTAPACE cultural values might not be all significant for CRM system implementation and they might correlate.

Employees' Readiness for CRM System Implementation

Creating employees' readiness for CRM system implementation is critical to CRM system implementation and may relate to may organizational factors. The concept of employees' readiness for organizational change had emerged as a result of employees' resistance to organizational change (Lizar et al., 2015). Prior scholars were interested in identifying the factors that facilitate organizational change (Imran et al., 2016). Multiple researchers have explored several factors and contexts that may create employees' readiness for organizational change (Imran et al., 2016). These factors include employees' attitudes toward organizational change, employees' willingness to accept organizational change, expected benefits of organizational change, and trust in management (Imran et al., 2016). Managers may need to understand the different organizational factors that affect employee's readiness for CRM system implementation.

Management researchers have provided numerous definitions to employees' readiness for organizational change. Armenakis et al. (1993) defined readiness for organizational change as individuals' beliefs, intention, attitudes, and behavior regarding the degree to which change is necessary and management has the capacity to implement it successfully. Rafferty, Jimmieson, and Armenakis (2013) defined employees' readiness for organizational change as the degree to which individuals think they are willing to

accept, support, and implement a particular organizational change initiative. Researchers and practicing scholars may have not agreed on a precise definition of readiness for organizational change. Vakola (2014) stated that there is no clear conceptualization and definition of readiness for organizational change. A lack of a comprehensive definition of employees' readiness for organizational change could be the reason for the lack of an effective assessment of it.

Components of employee's readiness for CRM system implementation.

Employees' perceptions of the need for and the benefits of CRM system implementation influence employees' readiness for CRM system implementation. Holt et al. (2007) identified five prominent factors that influence employees' readiness for organizational change. The five factors that influence employees' readiness for organizational change are discrepancy, efficacy, organizational valence, management support, and personal valence (Holt et al., 2007). Discrepancy refers to employees' beliefs regarding the need for a change (Armenakis et al., 1993). Appropriateness refers to the need for a proposed change (Armenakis et al., 1993). Efficacy is the capability of an organization to implement a change (Armenakis et al., 1993). Principal support refers to management support during the change implementation process (Armenakis et al., 1993). Valence refers to the attractiveness related to the perceived benefits of the change (Armenakis et al., 1993). Managers' support is critical to a successful CRM system implementation as managers are responsible for creating employee's readiness for CRM system implementation.

More specifically, employee's readiness for CRM system implementation reflects their beliefs and attitudes toward CRM system implementation. In a literature review, Lizar et al. (2015) suggested that employees' readiness for organizational change consists of employees' beliefs and attitudes toward organizational change initiative, a state of unfreezing, and thoughts toward organizational change initiative. Arguably, employee's readiness for CRM system implementation reflects employee's beliefs about discrepancy, efficacy, organizational valence, management support, and personal valence. I examined employee's beliefs regarding efficacy, management support, and personal valence as employee's readiness for CRM system implementation.

The antecedents to employee's readiness for CRM system implementation. Internal and external organizational factors may influence employees' readiness for CRM system implementation. Rafferty et al. (2013) classified the antecedents to employees' readiness for organizational change into three broad categories: (a) external organizational pressure, (b) internal context enablers, and (c) personal characteristics and the nature of the work group. Understanding the antecedents to employee's readiness for organizational change is important as employee's readiness for organizational change influences other organizational factors such as employee's resistance to organizational change.

Employees' readiness for organization change impacts many organizational variables. Employees' readiness for organizational change differs from employees' resistance to organizational change (Armenakis et al., 1993). However, employees' readiness for organizational change is a precursor for employees' resistance to

organizational change (Armenakis et al., 1993). According to Armenakis et al. (1993), employees' readiness for organizational change represents the cognitive precursor to their behaviors of either resisting or supporting organizational change initiatives. Armenakis et al. described employees' readiness for organizational change in terms of employees' beliefs, attitudes, and intentions to engage in organizational change effort. Employee's readiness for CRM system implementation may affect employee's resistance and support to CRM system implementation.

Preparing employees for organizational change may reduce employee's resistance to organizational change and in turn reduces organizational change failure rate. Straatmann et al. (2016) stated that failure to establish employees' readiness for organizational change is the key reason for unsuccessful organizational change implementation. Arguably, a lack of employee's readiness for CRM system implementation might be a key reason for CRM system implementation failure and employee's resistance to CRM system implementation.

Employee's readiness for CRM system implementation and communication. Communication is critical to employees' readiness for organizational change. Armenakis et al. (1993) described three strategies for creating employees' readiness for organizational change: (a) oral and written persuasive communication, (b) active participation, and (c) management of external sources of information. McKay et al. (2013) reported results consistent with Armenakis et al. in a way that communications, participation, and affective commitment to organization are the factors that influence employees' resistance to organizational change. Communication is critical for both

employee's resistance to and readiness for CRM system implementation. In order to ensure a successful CRM system implementation, managers may need to develop good communication channels with employees to ensure active participation.

Impact of employee's readiness for organizational change on CRM system i
mplementation. Employee's readiness for CRM system impacts CRM system implementation. A number of researchers have proposed that employees' readiness for organizational change can facilitate organizational change. Vakola (2014) examined employees' readiness for organizational change and the effect of organizational change on the relationship between employees' readiness for organizational change and employee personality and characteristics of organizational change contexts. The participants were 183 employees of a technological company implementing a large-scale restructuring change. Vakola found that the perceived impact of organizational change mediates the relationship between prechange contexts and employees' readiness for organizational change. According to Vakola, employees who are ready for organizational change display proactive and positive attitudes toward organizational change. Additionally, employees' readiness for supporting organizational change initiatives depends on the perceived benefits of organizational change that compensate the potential risks of organizational change implementation (Vakola, 2014). In order to implement organizational change effectively, managers and leaders are required to develop employees' readiness for organizational change (Holt et al., 2007). For a successful CRM system implementation, managers may require to assess employee's readiness for CRM

system implementation and communicate the potential benefits of CRM system implementation before its implementation.

Similarly, Caldwell (2013) reviewed the literature on organizational change, employees' readiness for organizational change, and the existing models for employees' readiness for organizational change. Caldwell argued that previous researchers may have not addressed the antecedents to employees' readiness for organizational change in the existing models for employees' readiness for organizational change including Armenakis and Harris' (2009) model. Armenakis and Harris' model for employees' readiness for organizational change encompassed six factors: (a) change readiness beliefs, (b) active participation of change recipients in change effort, (c) the work of change agents, (d) proactive program for shaping change recipients, (e) additional practices, and (f) assessment and feedback on beliefs at different change phases involved limitations.

According to Armenakis and Harris (2009), these factors are essential for effective organizational change initiatives. Armenakis and Harris, however, disregarded important elements that influence employees' readiness for organizational change. Caldwell (2013) proposed that employees judgement and interpretation of organizational change, employees' participation, and initiation of organizational change influence employees' readiness for organizational change. In a cross-sectional study, McKay et al. (2013) examined the role of employees' readiness for organizational change as an antecedent to employees' resistance to organizational change. McKay et al. noted that the contextual antecedents to employees' resistance to organizational change are communications, participation in organizational change initiative, and affective

commitment. The participants were 102 employees from six companies in New Zealand and Australia. McKay et al. found a significant relationship between the contextual antecedents and employees' readiness for organizational change and employees' resistance to organizational change. These results indicate the importance of communications, employees' participation in organizational change initiatives, and affective commitment in organizational change implementation process. The authors, however, used a cross-sectional design and a self-report instrument which limited the causal inferences.

Implementation of readiness for CRM system can occurs at multiple levels. In a literature review, Vakola (2013) analyzed the concept of readiness for organizational change and proposed that managers need to incorporate readiness for organizational change at three levels. The three levels are (a) a macro level, (b) a meso-level, and (c) micro level (Vakola, 2013). The author aimed to distinguish among individuals' readiness for organizational change, groups' readiness for organizational change, and organizational readiness for organizational change. At the macro level, managers are needed to integrate readiness for organizational change into organization's strategic plan to identify organizational needs so as to obtain flexibility and adaptability (Vakola, 2013). At this level, managers need to build trust with employees to promote employees' positive attitudes toward organizational change (Vakola, 2013). At the meso-level, managers are required to address organization's specific needs, create, and foster favorable group to facilitate organizational change implementation (Vakola, 2013). At the micro level, managers can create employees' readiness for organizational change by

using various activities such as employees training and development programs, performance appraisals, and personnel selection process (Vakola, 2013). Vakola argued that readiness for organizational change is a broad concept that includes many factors and there is no distinction between individuals and organizational readiness for change in the current literature. Further, Vakola suggested that researchers should investigate the effect of each type of readiness for organizational change on organizational change process. Understanding the different levels of readiness for CRM system implementation change can help managers in designing appropriate strategies for addressing employee's readiness for CRM system implementation.

Employees' readiness for organizational change is critical to CRM system implementation. Appelbaum et al. stated that a high level of employees' readiness for organizational change can lower employees' resistance to organizational change. In contrast, a lower level of employees' readiness for organizational change can result in a higher level of employees' resistance to organizational change (Appelbaum et al., 2015). A lack of employees' readiness for organizational change is one of the reasons for failure of organizational change initiatives (Lizar et al., 2015). Lizar et al. recommended further investigation of organizational factors such as the culture of the organization, managerial support, and leadership as predictors of employees' readiness for organizational change. Arguably, employees' readiness for and resistance to CRM system are correlated with the culture of the organization.

Factors that affect employee's readiness for CRM system implementation. Employees' readiness for organizational change impacts CRM system implementation.

Numerous researchers who have investigated CRM system implementation reported that employees' readiness for organizational change is critical to its implementation (Shokohyar et al., 2016). Shokohyar et al. (2016) examined the factors that influence employees' readiness for CRM system implementation. Shokohyar et al. reviewed various employees' readiness for organizational change assessment models for technology acceptance and social CRM (SCRM) system. Shokohyar et al. concluded that researchers may not have thoroughly investigated employees' readiness for CRM system implementation. Additionally, Shokohyar et al. argued that scholars may have not addressed assessment of employees' readiness for CRM system implementation. Further, Shokohyar et al. suggested a model for assessment of organizational change readiness for technology adoption. The authors classified the factors that affect organization's readiness for change into four categories: organizational factors, technological factors, environmental factors, and human factors. The authors, however, may have not specified the impact of each group of factors. Rafferty et al. (2013) pointed out two limitations in literature on employees' readiness for organizational change. The first limitation is that researchers may have not studied affective attitudes of employees' readiness for organizational change (Rafferty et al., 2013). The second limitation is that management scholars may have not investigated readiness for organizational change from a multilevel perspective (Rafferty et al., 2013). I examined two types of employees' attitudes (affective and behavioral attitudes) toward CRM system implementation.

To conclude the literature review on the factors affecting CRM system implementation it said that many researchers have posited a relationship among the

culture of the organization and a successful CRM system implementation. Researchers, however, have suggested further examination of the role of the culture of the organization on a successful implementation of CRM system (Abdulwahab & Ali, 2013). The response would be the type of the culture of the organization may be a determinant to a successful CRM system implementation.

Further, although many researchers have reported that employees' resistance to organizational change as a key reason for CRM system implementation failure, other researchers have indicated other reasons for CRM system implementation failure. Other factors include a lack of a universal definition of CRM system implementation, business processes and capabilities, and insufficient knowledge of use of technology (Vijay Pal & Pooja, 2014). Additional factors that contribute to the failure of CRM system implementation include a lack of management support and commitment to organizational change, unclear vision and strategy, and untrained employees (Farhan et al., 2018). This evidence may suggest that these factors contribute to employee's resistance to CRM system implementation. This information supports the claim that there is a need for further examination of the relationship among the factors that facilitate or impede CRM system implementation.

Summary and Conclusions

In this chapter, I reviewed the literature on the diffusion of innovation-decision process theory to demonstrate the theoretical developments and the prior research supporting the application of the theory in CRM system implementation. I reviewed the body of work regarding definitions, existing models, and stages of CRM system

implementation. Scholars have provided a variety of perspectives and definitions related to CRM systems, but they have not addressed the interrelationships among the factors that facilitate or impede CRM system implementation. Further, I reviewed the existing literature on prerequisites for CRM system implementation. Besides the proposed prerequisites, I revealed numerous prerequisites for CRM system implementation. Scholars may have not agreed on a certain set of prerequisites for CRM system implementation. I also examined the current literature on employee's resistance to organizational change in general and specifically to CRM system implementation. I disclosed numerous perspectives and research findings that addressed many aspects of employees' resistance to organizational change. The literature review indicated that the research on employees' resistance to CRM system implementation is incomplete. Scholars have indicated that the concept of employees' resistance to organizational change encompasses three dimensions: cognitive, affective, and behavioral attitudes toward organizational. Arguably, these dimensions relate to CRM system implementation. I reviewed the literature on the culture of the organization and found several concepts and terms that describe the culture of the organization. In the context of CRM system implementation, several researchers have examined OCTAPACE cultural values to emphasize the importance of this level of the culture of the organization. Scholars may have not addressed OCTAPACE cultural values in the CRM system implementation model. Furthermore, I reviewed the literature on the concept of employee's readiness for CRM system implementation and found disagreement on the definition of the concept. I presented the current research on the components, antecedents

of the concepts and related concepts. Although scholars have extensively investigated these concepts, scholars may have not examined the relationship among these concepts. Overall, the literature on the concepts indicates multiple perspectives, conceptualizations, and gaps. Prior researchers may actually lack a clear understanding of how these concepts interact. Further, the literature review revealed disagreement among scholars regarding definitions and components of each concept. In Chapter 3, I address operational definitions of these concepts and examine the relationship among them through data collection and analysis.

Chapter 3: Research Method

The purpose of this quantitative cross-sectional study using a survey and MLR was to examine the factors that facilitate CRM system implementation. Specifically, I examined the relationship among employee's resistance to CRM system implementation and five predictor variables for customer service employees in the U.S. telecommunications industry. The five predictor variables were the culture of the organization, the employee's readiness for CRM system implementation, prerequisites for using a CRM system, age, and gender. The target population was customer service employees in the U.S. telecommunications industry. Data were collected from the target population via an online survey using SurveyMonkey.

In this chapter, I discuss the research design, the target population, the sample, the setting, and data collection and data analysis procedures. I also discuss the instruments I employed to measure the study variables. Further, I explain the measures that I have taken for the ethical protection of the participants. At the end of this chapter, I provide a summary of the design and methods of the study leading to Chapter 4, the results of the study.

Research Design and Rationale

The research design I employed to answer the research questions was a quantitative cross-sectional study using a survey and MLR. The design was appropriate for conducting my study for many reasons. First, the research question to be answered was what kind of a relationship exists among employee's resistance to CRM system

implementation, the culture of the organization, the employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender.

The research design I selected was aligned with the purpose of my study to examine the factors that facilitate CRM system implementation. The cross-sectional design is appropriate for the survey study (Frankfort-Nachmias et al., 2015). Cross-sectional design was appropriate for several reasons. A cross-sectional design is a research method in which data are collected on more than two variables simultaneously and analyzed for associations among the variables (Marston, 2010). Cross-sectional surveys are relatively quick and inexpensive (Green & Salkind, 2014). In a cross-sectional design, researchers use one group of participants at one time (Marston, 2010). Additionally, cross-sectional data are less time-consuming to collect compared to longitudinal studies (Lavrakas, 2008). The timeframe of completion of this study and the limited resources to carry out a longitudinal study dictated the choice of selecting a cross-sectional study. Overall, the cross-sectional study using a survey and MLR was aligned with the purpose of the study and was the most suitable design to answer the research question and test the research hypotheses.

The advantages of MLR are that a researcher can assess the distinctive effect of each predictor variable on the response variable and examine the overall effect of a model consisting of a subset of or all of the predictor variables (Hill & Lewicki, 2007; Green & Salkind, 2014). I used MLR to assess the unique effect of the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender on employee's resistance to CRM system

implementation. I assessed the overall effect of the culture of the organization, employee's readiness for CRM system and prerequisites for CRM system implementation on employee's resistance to CRM system implementation. Despite the advantages of MLR, it involves some limitations. The key limitation of MLR is that a researcher can only confirm a relationship among the variables, but cannot ascertain the underlying causal mechanism (Frankfort-Nachmias et al., 2015).

Methodology

Population

The target population of my study was full-time customer service employees using CRM systems and working in the U.S. telecommunications industry. The rationale for using customer service employees was that they are the most resistant group to organizational change (Giauque, 2015; Russ, 2009). CRM system implementation is a form of organizational change, thus customer service employees may constitute the most resistant group to CRM system implementation.

The demographic information about the participants is important as it may help a researcher ensure that the potential participants in the study are a representative sample of the intended population (Salkind, 2010a). The demographic characteristics of employees influence employees' acceptance of organizational change (Merdzanovska, 2016). The demographic variables were gender and age. Employees' gender and age impact their resistance to organizational change implementation (Giauque, 2015). Younger employees accept organizational change implementation more easily than older employees (Merdzanovska, 2016) and older employees are more resistant to organizational change

(Garcia-Cabrera & Garcia-Barba Hernandez, 2014). In the survey, I coded employees' age as age group 1, 2, 3, or 4. In the analysis of data, I coded these groups using three dummy-coded variables. I defined employees' age groups as follows:

1. Employees' age group 1 (18-29 years) represents the innovators.
2. Employees' age group 2 (30-44 years) represents the early adopters.
3. Employees' age group 3 (45-59 years) represents the early majority.
4. Employees' age group 4 (60 years and older) represents late majority and the laggards.

Sampling and Sampling Procedures

Once a researcher defines the population, a researcher can create a sampling frame. A sampling frame is a set of groups from which a researcher will select the sample (Kalof, Dan, & Dietz, 2008). To ensure that the sampling frame reflects the target population, a researcher has to create the sampling frame accurately (Kalof et al., 2008). Before delving into the sampling and the sampling procedure, I verified some concepts related to sampling. The first concept is the unit of analysis. According to Frankfort-Nachmias et al. (2015), the unit of analysis in social research is the entity under study. There are different forms of units of analysis including individual, groups, organizations, and social artifacts (Frankfort-Nachmias et al., 2015). The unit of analysis was full-time customer service employees who use CRM systems and work in the U.S. telecommunications industry.

Researchers may use different sampling strategies including simple random sampling and stratified sampling to select the research sample. The participants were

sourced through SurveyMonkey Audience. SurveyMonkey Audience is an online service commonly used by students, researchers, and academics to collect data for their research (SurveyMonkey Audience, *n. d.*). Prior researchers used SurveyMonkey Audience to recruit participants for their research (Hall & Towers, 2017).

According to Salkind (2010a), simple random sampling means that every member of the population has an equal chance of being selected as a member of the sample. The participants were randomly selected through SurveyMonkey. The sampling frame was all full-time customer service employees using a CRM system in the U.S. telecommunications industry.

Researchers can use different data collection methods to collect the required data including a self-administered online survey where the respondents answer the questionnaire by themselves (Salkind, 2010a). Data were collected from the participants using an online survey using Survey Monkey. The online survey is a faster and cost-effective method compared to other data collection methods (Frankfort-Nachmias et al., 2015).

Researchers can determine the required minimum sample size by determining the desired power, confidence level, and effect size, along with considering the number of independent variables (Frankfort-Nachmias et al., 2015). I set the confidence level to.05 and power to 95%. Setting the power at 95% enables a researcher to be 95% confident of detecting the specified effect size (Frankfort-Nachmias et al., 2015). Setting the confidence level to .05 ensures that there is only a 5% probability of identifying an effect that is false.

To determine the appropriate sample size, I conducted a priori power analysis using G*Power software (Faul, Erdfelder, Buchner, & Lang, 2009). The effect size was 0.28 based on three previous studies where researchers have examined the relationship between the culture of the organization (one of the predictor variables) and employee's resistance to organizational change (the response variable). Carlstrom and Ekman (2012) reported $R^2 = 0.21$. Johansson, Åström, Kauffeldt, Helldin, and Carlström (2014) reported $R^2 = 0.07$. Rashid, Sambasivan, and Rahman (2004) reported the $r = .0566$. The average effect size was .28.

Next, I applied these criteria to the G*Power analysis. The statistical test was MLR and the design of the study was fixed model, R^2 deviation from zero because the purpose of the regression was to predict the response variable from a set of predictor variables (Faul et al., 2009). I selected a two tailed test as the null hypothesis was non-directional hypothesis, effect size = .28, $\alpha = .05$, power $(1-\beta) = .95$, and the number of predictors = 5.The results of the G*Power analysis indicated that the minimum required sample size was 77 participants. See Appendix A.

Procedures for Recruitment, Participation, and Data Collection (Primary Data)

The procedure I followed to recruit the participants was as follows: First, I contacted Survey Monkey Audience and provided them the inclusion criteria of the potential participants. Once I received approval from Survey Monkey Audience, I created an account with SurveyMonkey who established the website for data collection. Once I completed the survey questionnaire for the study, Survey Monkey Audience prepared for the participants' recruitment. Based on SurveyMonkey Audience targeting criteria, the

participants were full-time customer service employees working in the U.S. telecommunications industry.

Survey Monkey Audience sent an invitation email to the respondents to participate in the study. SurveyMonkey Audience randomly selected the participants. The invitation email contained the key details of the study including the purpose of the study, the participants' requirements, the voluntary nature of the study, and contact information if the participants have any question regarding their participation in the study. Additionally, the invitation email included a link to the survey questionnaire. I asked the participants to indicate their agreement or disagreement to participate in the study by clicking "agree" or "disagree" button. The survey included an introduction, instructions for answering the survey, demographic information, and four instruments for collecting data on the continuous variables. I conducted the survey questionnaire online using services provided by SurveyMonkey.com.

Despite the advantages of the online survey, there are some limitations of using online survey. The key challenges of online survey are the probability that respondents have not sufficient knowledge and skills to use digital devices such as computers and an inability to access the survey via the Internet (Rhodes, Bowie, & Hergenrather, 2003). The main problems of a survey design are the sampling error, coverage error, non-response errors, and measurement errors (Johnson & Braun, 2016). Sampling error occurs because of analysis of a sample rather than the whole population (Johnson & Braun, 2016). Coverage errors result from population sampling selection procedures if not individuals in the target population have a probability to be selected (Johnson & Braun,

2016). The non-response errors occur when the selected participants are not willing to participate in the study (Johnson & Braun, 2016). Measurement errors may exist because of the survey instruments (Johnson & Braun, 2016). Other disadvantages of using an online survey include privacy concerns and low response rates (Chang & Vowles, 2013).

The demographic information collected from the participants included age and gender. SurveyMonkey Audience did not send a follow-up email to remind the participants to answer the survey because the panel was large enough to achieve the required responses. In the survey, I included an exit survey link on every page to enable participants to end the survey whenever they chose. I indicated the required time for survey completion as about 15 minutes. However, the respondents spent only 5 minutes on average to complete the survey.

Upon receiving the completed surveys, I saved the surveys on my computer using a protected password. I adhered to all ethical standards to protect the confidentiality of the collected data and anonymity of the participants. SurveyMonkey Audience did not provide participants' identifiers such as e-mails and telephone numbers. I will keep the data for 5 years. After the 5 years, I will delete all stored digital files according to Walden University's guidelines.

Pilot Study

Lewis-Beck et al. (2004) defined a pilot study as a small-scale study performed before the main study. Researchers use a pilot study for many purposes. Researchers conduct a pilot study to pretest a certain research instrument (Lewis-Beck et al., 2004). A pilot study is recommended when a researcher needs to adapt an existing valid published

scale (Johanson & Brooks, 2010). I conducted a pilot study because I adapted two published scales to ensure clarity of questions and instructions (Salkind, 2010b).

The procedures for conducting a pilot test are the same as those used to conduct the main study (Salkind, 2010b). Before conducting my study, I obtained approval from Walden University's Institutional Review Board (IRB). I administered the survey using the SurveyMonkey platform, an online survey tool. I used SurveyMonkey for participants' recruitment and data collection. SurveyMonkey Audience randomly selected the potential participants matching the pilot study sample criteria. The inclusion criteria for the participants were customer service employees, full-time employed, using CRM management system, and work in the U.S. telecommunications industry. The pilot study was a self-administered online survey. SurveyMonkey Audience sent an invitation e-mail to the participants inviting them to complete the pilot survey. The invitation e-mail included a link to a web-based survey. All the potential participants were received an electronic informed consent before starting the pilot study survey. I requested the participants to indicate that they were willing to participate in the pilot survey before beginning the survey. If the participants were not willing to take part in the pilot survey they were able to exit the survey.

Determining the appropriate sample size for a pilot study is a challenge for researchers (Johanson & Brooks, 2010). The appropriate sample size for a pilot study depends on the nature of the pilot study (Johanson & Brooks, 2010). According to Johanson and Brooks (2010), a sample size of 10 to 15 is sufficient for a pilot study in

social science research. I recruited 50 employees for the pilot study, which were separate from the participants in the main part of the study.

Instrumentation and Operationalization of Constructs

I used four questionnaire instruments to collect data from the respondents on four continuous variables and two questions to collect data on the two demographic variables, age and gender. The response variable was employee's resistance to CRM system implementation. The five predictor variables were the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender.

It is important for a researcher to consider the number of questions in a survey. A longer survey takes more time to complete and leads to missing data (Stanton, Sinar, Balzer, & Smith, 2002). In addition, a longer survey leads to a low response rate compared to a short survey (Stanton et al., 2002). A researcher needs to base a decision regarding the use of an instrument on the content rather than the length of the questionnaire (Rolstad, Rolstad, Adler, & Ryden, 2011). According to Goetz et al. (2013), researchers can use a short form of a long instrument to maintain validity and reliability of the original instrument. Prior researchers have selected items from the OCTAPACE culture profile to suit the purpose of their research (Kumar, 2017). To increase the response rate and minimize participants' discomfort results from a lengthy survey, I reduced the number of items on each scale to suit the purpose of my study. The total number of questions in the survey was 50.

The response variable. The response variable was employee's resistance to CRM system implementation (*Y*). I measured the response variable (*Y*) by resistance to change (RTC) attitudes scale, a 7-point Likert scale. I used 10 out of original 15 questions. The resistance to change scale was developed by Oreg (2006). The scale is valid and reliable with a Cronbach's alpha = .96. Oreg developed a subscale of resistance to change, the attitudes scale, to measure the extent to which an employee resists the organizational change cognitively, affectively, and behaviorally. The RTC scale includes three subscales: affective, cognitive, and behavioral scale. The reliability (Cronbach's alpha) for the behavioral, affective, and cognitive were .77, .78, and .86 respectively. Since I focused on the factors affecting CRM system implementation at the persuasion stage at which employees form favorable or unfavorable attitudes toward CRM system implementation, I only used affective and behavioral attitudes subscales of the RTC scale.

I asked the participants to quantify their level of agreement with the statements addressing their affective attitudes and behavioral attitudes. The affective attitudes subscale included five items, items 1-5. A sample item was "I was stressed by the change." The behavior subscale included five items, items 6 -10. A sample item was "I looked for ways to prevent CRM system implementation from taking place." The range of possible score was 1 to7, with higher scores indicating higher levels of resistance to change: 1 (*strongly disagree*), 2 (*disagree*), 3 (*somewhat disagree*), 4 (*neither agree or disagree*), 5 (*somewhat agree*), 6 (*agree*), and 7 (*strongly agree*). Table 1 shows the operationalization of the two subscales.

I asked the participants to quantify their level of agreement with the statements addressing their affective attitudes and behavioral attitudes. I calculated the means of their responses to all the statements (after having reversed negative-coded items) to get the score for each subscale. I calculated the mean of the two subscales for the combined score of each respondent.

Table 1

Subscales, Operational Definition, and Number of Questions on RTC Scale

Subscale	Operational Definition	No. of Questions
Affective attitudes	The degree to which employees agree with organizational change.	5
Behavioral attitudes	The degree to which employees agree with actions or intention to react to organizational change.	5

Table 2

Example Survey Questions for Measuring the Response Variable

Response Variable	Example Survey Questions
Affective attitudes subscale	"I was afraid of CRM system implementation."
Behavioral attitudes subscale	"I spoke rather highly of CRM system implementation to others."

Predictor variables. I included five predictor variables. The first predictor variable was the culture of the organization (X_1). I measured this variable (X_1) by the OCTAPACE profile questionnaire. Pareek (1997) developed the openness, confrontation,

trust, autonomy, pro-action, authenticity, collaboration, and experimentation (OCTAPACE) profile questionnaire. The OCTAPACE scale is valid and reliable with Cronbach's alpha = .89 (Solkhe, 2013). Dwivedi et al. (2014) used the OCTAPACE questionnaire to measure the cultural values that represent the spirit of the culture, the ethos. The questionnaire consists of two parts. The first part consists of 24 statements: three statements addressing each of the openness, confrontation, trust, autonomy, pro-action, authenticity, collaboration, and experimentation values. The questionnaire is a 4-point Likert scale ranged from: 1 (*to a very low extent*), 2 (*to a low extent*), 3 (*to a high extent*), and 4 (*to a very high extent*).

The second part of the questionnaire includes 16 statements on beliefs; two for each of the eight values. I asked the participants to check how much each belief is shared throughout the organization (see Appendix B). Items included statements such as "How much does the company actually value: Free interaction among employees, each respecting others' feelings, competence and sense of judgment and "An actual shared belief at the company is: Free and frank communication between various levels helps in solving problems." I used the second part of the questionnaire because the target population was customer service employees who were responsible for using CRM systems rather than developing business plan and business analysis.

Prior researchers used the questionnaire to measure employees' beliefs regarding presence of eight cultural values (Dwivedi et al., 2014; Solkhe, 2013; Neelam et al., 2015). I measured the culture of the organization by calculating the mean score of each

respondent on each of the eight items (after having reversed negative-coded items). Table 3, shows the operational definition of the eight values.

Table 3

Subscales, Operational Definition, and Number of Questions

Value	Operational Definition	No. of Questions
Openness	The degree to which employees believe they are allowed to express their opinions, ideas, feelings, and activities.	2
Confrontation	The degree to which employees believe they are motivated to take up challenges, solve problems, and confront similar situations.	2
Trust	The degree to which employees believe about the level of reciprocal trust between superiors and employees.	2
Authenticity	The degree to which employees believe about the genuineness interaction and expression of feelings about each other.	2
Pro-action	The degree to which employees believe about the level to which they can take initiative.	2
Autonomy	The degree to which employees believe about willingness at all levels to use power without fear and to allow others to do so.	2
Collaboration	The degree to which employees believe about their feeling of belonging and sense of equality in their organization.	2
Experimentation	The degree to which employees believe about the extent to which they are encouraged to innovate to solve problems.	2

Table 4

Example of Survey Questions for Measuring the OCTAPACE Culture

OCTAPACE culture	Example Survey Questions
Openness	"An actual shared belief at the company is: Effective managers put a lid on their feelings."
Trust	"An actual shared belief at the company is: Trust begets trust."
Experimentation	"An actual shared belief at the company is: In today's competitive situations, consolidation and stability are more important than experimentation."

The second predictor variable was employee's readiness for CRM system implementation (X_2). I measured employee's readiness for CRM system implementation (X_2) by organizational change recipients' beliefs scale (OCRBS). Armenakis et al. (2007) developed the OCRBS. OCRBS is a Likert scale. The scale measures employees' beliefs regarding five dimensions of readiness for organizational change: discrepancy, appropriateness, efficacy, principal support, and valence. Since the function of customer service employees is to implement the determined and designed organization changes, I measured employees' efficacy, principal support, and valence which were aligned with the function of this group. I used the scale to measure employees' beliefs regarding the following:

1. Efficacy: employees' capability to implement a CRM system.
2. Principal support: managers' support during CRM system implementation.

3. Valence: the attractiveness of perceived benefits of CRM system implementation.

The OCRBS is a valid a reliable scale with Cronbach's alpha = .85 (Armenakis et al., 2007). The Cronbach's alpha was reported as follows: appropriateness (.94), managerial support (.87), change efficacy (.82), and personal valence (.66) (Armenakis et al., 2007). A sample item was "This change will benefit me." The scale contains 24 items on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) (Armenakis et al., 2007). I used 15 out of original 24 items. I calculated the mean of the 15 items to develop the combined score for each respondent.

Table 5

Subscales, Operational Definition, and Number of Questions on OCRBS

Subscale	Operational Definition	No. of Questions
Efficacy	The degree to which employees believe that they can implement a CRM system.	5
Principal Support	The degree to which employees believe that managers support CRM system implementation.	6
Valence	The degree to which employees believe that CRM system implementation is personally beneficial.	4

Table 6

Example of Survey Questions for Measuring Employee's Readiness for CRM System Implementation

Employee's Readiness for CRM System Implementation	Example Survey Questions
Efficacy	"I have the capability to implement CRM system that is initiated."
Principal support	"The top leaders in this organization are "walking the talk."
Valence	"The change in my job assignments will increase my feelings of accomplishment."

The third predictor variable was prerequisites for CRM system implementation. I measured prerequisites for CRM system implementation (X_3) using the CRM capabilities scale developed by Wang and Feng (2012). Wang and Feng used the scale to measure employees' degree of knowledge of customer interaction management capability and customer relationship upgrading capability. The scale is valid and reliable (Shafique et al., 2015). For customer interaction capability, Cronbach's alpha = 0.82. For customer relationship upgrading capability, Cronbach's alpha = 0.78 (Wang & Feng, 2012). I asked the participants to indicate their degree of agreement on their knowledge of CRM system implementation in their organization. The scale includes two subscales. I used 9 out of 15 original items. The questionnaire includes 5 items for customer interaction management capability. A sample item was "We regularly meet customers to learn their current and potential needs for new products." Customer relationship upgrading capability subscale consists of 4 items. A sample item was "We have formalized procedures for cross-selling to valuable customers."

I measured the prerequisites for CRM system implementation variable (X_3) on a five-point Likert scale 1 (*Strongly Disagree*), 2 (*Disagree*), 3 (*Uncertain*), 4 (*Agree*), and 5 (*Strongly Agree*). Researchers have used the scale to measure employees' degree of knowledge of CRM system implementation in their organization (Shafique et al., 2015). I obtained permission from the publishers and authors of the instruments to use all the scales. I calculated the mean of the items of each subscale to get the score for each respondent. I calculated the mean of the subscales for the combined scores of each respondent.

Table 7

Subscales, Operational Definition, and Number of Questions of CRM Capabilities Scale

Subscale	Operational Definition	No. of Questions
Customer Interaction Capability	The degree to which employees know skills to determine, attract, and maintain profitable customers.	5
Customer relationship Upgrading	The degree to which employees know about skills to sell additional expensive products or services and sell additional products and services to the current customers.	4

Table 8

Example of Survey Questions for Measuring Prerequisites for CRM System Implementation

Prerequisites for CRM System	Example Survey Questions
Customer interaction capability	"We regularly meet customers to learn their current and potential needs for new products."
Upgrading capability	"We try to systematically extend our "share of customers" with high-value customers."

The fourth predictor variable was age. To assess age groups in MLR, I created three dummy variables (X_4, X_5, and X_6). To collect age, I asked the participants to indicate their age group (see Appendix A).

Table 9

Age Dummy Variables Coding

Category /Mathematic Expression	X_4	X_5	X_6
Group 1	1	0	0
Group 2	0	1	0
Group 3	0	0	1
Group 4	0	0	0

The fifth predictor variable was gender. I included a question on the survey to collect gender (X_7) (see Appendix A). To enter gender into the regression, I created one dummy variable. Table 10 shows gender dummy variable coding. Table 11 presents a summary of variables data collection.

Table 10

Gender Dummy Variable Coding

Category/Mathematical Expression	X_7
Female	1
Male	0

Table 11

A Summary of Variable Data Collection

Variable	Instrument	Type	Scale (items, range)	Scoring Range	RQs
Y	RTC attitudes scale	Response	Interval	CS:10-70	RQ1
X_1	OCTAPACE	Predictor	Interval	CS:16-64	RQ1
X_2	OCRBS	Predictor	Interval	CS:15-105	RQ1
X_3	CRM capabilities	Predictor	Interval	CS: 9-45	RQ1
X_4-X_6	Employee's age	Predictor	Nominal (Dummy coded)		
X_7	Employee's gender	Predictor	Nominal (Dummy coded)	0 = male 1 = female	

Note. RQs = research questions. CS = composite score.

Data Analysis Plan

Before conducting data analysis, I performed data screening and cleaning to identify and correct the potential errors in the survey data (Sue & Ritter, 2007). First, I conducted data screening to see the patterns of missing data, inconsistencies in the data, abnormal pattern in the distribution, and the extreme values (the outliers) (Sue & Ritter, 2007). I removed incomplete responses and replaced two missing points with the mean of each subscale. There were no outliers to remove or alter.

After data cleaning, I recoded reverse-coded items in each scale. Next, I assessed the validity and reliability of each scale. It is important for quantitative researchers to ensure the validity and the reliability of the measurements (Basham, Jordan, & Hoefer, 2010). Validity refers to the degree to which a measurement measure what is intended to be measured and not measuring a different concept (Basham et al., 2010). The validity of an instrument is described as the construct validity (Dawson, 2017). Reliability refers to the extent to which an instrument produces consistent scores over repeated attempts (Basham et al., 2010). Reliability indicates the quality of the measurement and essential for validity (Basham et al., 2010). Research results consider reliable if similar results can be obtained repeatedly (Basham et al., 2010). I used Cronbach's alpha to assess the reliability for the internal consistency of the instruments.

Researchers have used factor analysis to determine the validity of scales and to demonstrate how different items in a multi-item instrument relate to each other, yet differ from other instruments (Dawson, 2017). There are two types of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Researchers have used EFA to test for the relationships among items in a multi-item scale, and then give items to scales (factors) (Dawson, 2017). There are several methods for conducting a factor analysis. One of these methods is a principal component analysis (PCA). I conducted a PCA to assess whether the items in each scale used to measure a variable related to the construct intended to be measured.

After validity assessment, I assessed the reliability of each scale. Reliability can be viewed in different ways including internal consistency, split-half, and inter-rater

reliability (Field, 2013). To confirm that a scale is free from measurement errors, researchers have to assess the internal consistency. Researchers have used internal consistency to estimate how the different items in a multi-item scale consistent with each other (Dawson, 2017). I calculated Cronbach's alpha to assess reliability of each instrument. According to Field (2013), a Cronbach's alpha greater than .7 is an acceptable value to exhibit scale reliability.

The first step in conducting a PCA is performing data screening, determining the number of factors or components need to be retained, and type of rotation to be used (Dawson, 2017). At the end of the analysis, a reliability analysis will be performed for the questions loaded up in each factor to determine the reliability of the scale (Field, 2013). There are two main methods of rotations: orthogonal rotations and oblique rotations (Field, 2013). Orthogonal rotation is suggested if factors are uncorrelated or independent, while if factors are assumed to be correlated, oblique rotation methods can be used. To determine which rotation method to use, I ran the analysis using oblique rotation to produce the component correlation matrix to determine whether the factor correlate orthogonally or obliquely. According to Field (2013), if the correlation values are greater than .5, it suggests that the factors are strongly correlated or obliquely related, whereas if the correlations values are less than .5, it means that the factors are orthogonally related. Further, items with factor loading greater than .3 were considered significant factor (Field, 2013).

Before conducting PCA, researchers need to test the main assumptions of the analysis, which are sample size adequacy and correlation between variables (Dawson,

2017). Sample size adequacy can be measured by Kaiser-Meyer-Olkin (KMO). The KMO value range between 0 and 1, the closer the value to 1 is better (Field, 2013). If the KMO value is less than .5, it suggests sample problem (Field, 2013).The correlation among variables can be assessed by Barllet's test of sphercity, which should be significant, a significant value indicates correlations among variables (Field, 2013).

To analyze the collected data, I conducted descriptive statistic and inferential statistics analysis. The purpose of the descriptive statistics was to describe the characteristics of the data (Marshall & Jonker, 2011). First, I performed a frequency distribution to see the general trends in the data (Field, 2013). I performed descriptive statistics analysis to detect incorrect values and missing values for each variable and report the frequencies (Sue & Ritter, 2007). For the demographic variables, age and gender, there were no missing values. For the quantitative variables, I replaced the missing data with the mean score of each variable. Finally, I transformed data into variables that I used in the analyses (Sue & Ritter, 2007).

The level of data measurement was interval measurement for the continuous variables (employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, and prerequisites for CRM system implementation) as data were collected using Likert-type scale measurements. Variables were calculated as the mean of a specific subset of survey items. I used one group of participants. The study variables were four continuous variables and two dummy coded demographic variables (age and gender). I used MLR to analysis data.

Multiple Linear Regression (MLR)

The regression model representing the population is the following:

$$Y_i = \beta_0 + \beta_1 X_1 \ + \ldots + \beta_k X_k + \varepsilon_j$$

where

Y_i = ith observation of the dependent, outcome, or response variable.

β_0 = Y intercept for the population.

X_j = jth independent, input, predictor, or explanatory variable.

β_j = slope (coefficient) for the population for the independent variable X_j.

ε_j = random error in Y for observation i.

k = number of predictor variables (X).

This is the actual regression model, which expresses the relationship between the dependent variable, *Y*, and the set of all known independent variables, X_1 through X_k, for the population. Influences that are not known or measured are captured in the error term, ε. The predictive model, shown later, includes only those independent variables that are significant predictors of *Y*, or are likely to be significant and contribute to the best predictive model of *Y*. The population coefficients, β_j , indicate how much the dependent variable, *Y*, varies for a unit increase in the independent variable, X_j. The coefficients represent the sensitivity of *Y* to each X_j.

Hypotheses. The null hypothesis for the significance of the multiple regression model (the hypothesis regarding the influence of the *Xs* on *Y*) is, there is no linear relationship between the dependent variable and any of (the entire set of) the independent variables, depicted mathematically as follows:

H_0: $\beta_1 = \beta_2 = \ldots = \beta_k = 0$ (all coefficients = 0)

The alternative hypothesis was, there exists a liner relationship between the dependent variable and at least one independent variable, depicted mathematically as follows:

H_a: at least one $\beta_j \neq 0$.

The null hypothesis was tested regarding the overall model (testing if there was a significant relationship between the dependent variable and the entire set of independent variables) using the *F* test (and its associated *p* value). The *F* test assesses whether the entire set of independent variables predicts the dependent variable. A *t* test (and its associated *p* value) determines the significance of each predictor variable, independently. The coefficient of determination (R^2) indicates the extent to which the set of independent variables contributes to the variance in the dependent variable (more precisely, the portion of variation in the dependent variable that can be attributed to variation in the entire model consisting of all predictors).

Model-building. Following the first run of MLR, a structured regression approach to model-building is used to evaluate possible regression models, considering the influence of individual predictor variables, including factor interactions, and their contribution to the strength of the overall regression model. The process ultimately eliminates independent variables exhibiting multicollinearity and which are proven not to be significant; or, do not contribute to the predictability of the regression model. The process produces a model whose independent variables are significant or likely to be significant, without multicollinearity, and which is the best predictive model based on

highest adjusted R^2 (which accounts for the number of independent variables in the model).

Predictive model. The predictive model includes all significant independent or explanatory variables, and all significant interaction terms; or those terms likely to be significant and contribute to the predictability of the regression model. For significant predictors, the dependent variable increases by the value of the coefficients (b_j) associated with each predictor. The predictive regression model is the following:

$$\hat{Y} = b_0 + b_jX_j + \ldots + b_kX_k$$

where

$\hat{Y}$ = "Y-hat" is the predicted value of the independent, outcome, or response variable.

b_0 = Y intercept for the sample

b_j = slope (coefficient) for the independent variable X_j for the sample.

X_j = jth independent, input, predictor, or explanatory, including interaction terms.

k = number of predictor variables (X).

The final predictive model includes only the significant predictors (independent variables) and the significant interaction terms; or likely significant predictors that contribute to the predictability of the model. There is no error term in the predictive model. The difference between the predicted value of Y ($\hat{Y}$) for any set of values for the independent variables and the actual, measured value of Y (Y_i) for the ith set of values for the independent variables is the error in the model (residual).

Assumptions

Before conducting MLR, a researcher needs to ensure that all the underlying assumptions of the MLR have been met. The main assumptions of the MLR are the following:

1. Linearity: a linear relationship between the response variable and the predictor variables. I used scatterplots to test for linearity.

2. Independence of errors or observations: the residuals terms of observations must not be correlated (Field, 2013). I assessed this assumption by the residual plot and a Durbin-Watson test.

3. Homoscedasticity: the variability of the residuals is the same through all values for the predictor variables. I assessed homoscedasticity by residual plots and Levene's test.

4. Absence of multicollinearity: the predictor variables must not highly correlate with each other (Allen, 2017; Field, 2013). In case of multicollinearity, researchers can remove any problematic variable and rerun MLR (Field, 2013). I evaluated multicollinearity by examining the Variance Inflation Factors (VIFs) (Allen, 2017).

5. Normal distribution of the residuals or normal distribution of the errors (Allen, 2017). I assessed this assumption visually by using a normal probability plot (P-P Plot) of the residuals.

Hypothesis Testing

I used SPSS software version 24, XLStat, and PHStat for data analysis. I ran MLR to analyze the quantitative data pertaining to the research hypotheses (Field, 2013). I tested the MLR assumptions before conducting the inferential statistics. Table 12 is a summary of hypothesis testing.

Table 12

Hypothesis Testing: *Summary*

Null Hypothesis	Predictor (Independent)	Response (Dependent)		Test Statistic Parametric Assumptions met	Test Statistic Parametric Assumptions not met
H_0	X_1, X_2, X_3, X_4, X_5, X_6, and X_7		Y	MLR	*t*-test

The Research Question: What is the relationship among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender?

H_0: There is no relationship among the response variable (employee's resistance to CRM system implementation) and the set of the predictors (the culture of the organization, employee's readiness for CRM system, prerequisites for CRM system implementation, age, and gender).

Statistically: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = 0$ (all coefficients = 0) where β_j represents the *j*th regression coefficient among seven predictors. β_4, β_5, and β_6 were the population coefficients for the three dummy variables of the fourth predictor.

H_a: There is a relationship between the response variable (employee's resistance to CRM system implementation) and at least one of the predictors (the culture of the organization, employee's readiness for CRM system, prerequisites for CRM system implementation, age, and gender). Statistically: At least one $\beta_j \neq 0$.

I interpreted the results to determine whether the predictor variables, individually, predict the response variable (the dependent variable) or not. In addition, I used the results to determine the best predictive model of the dependent variable.

Threats to Validity

External Validity

Validity refers to the relationship between the conclusion of the inferences and the evidence that support them (Salkind, 2010b). External validity refers to the generalizability of the results of the study (Salkind, 2010b). The key threats to the external validity of my study were inability to control over the rival explanations and to manipulate the independent variables (Salkind, 2010a). Since my study was a quantitative cross-sectional study, it was difficult to rule out the alternative explanations (the confounding variables) because I did not employ random assignment (Salkind, 2010a). The consequence of a lack of control over the rival explanations may lead to inaccurate inferences of research results (Frankfort-Nachmias et al., 2015). Further, since a cross-sectional design does not involve manipulation of predictor variables, a researcher can only infer the direction of causation theoretically (Frankfort-Nachmias et al., 2015). The predictor variables were the culture of the organization, employee's readiness for CRM

system implementation, prerequisites for CRM system implementation, age, and gender which cannot be manipulated.

In order to minimize the potential threats to the external validity, I followed the standards of the research methodology carefully (Salkind, 2010b). According to Angen (2000), validity in quantitative research approaches relies on rigorous adherence to the rules and standards of research methods. To improve generalizability of my study, I used a relatively large sample and selected a representative sample of the population through SurveyMonkey Audience. A researcher has not to sacrifice generalizability for the internal validity (ensuring unambiguous evidence of the causation) (Frankfort-Nachmias et al., 2015). Thus, I considered both external and internal validity equally. However, the threat to the external validity may exist since the study was a cross-sectional not a longitudinal study.

Internal Validity

Threats to validity are the factors that influence the strength of inferences (Salkind, 2010b). Threats to validity refer to the factors that influence the internal validity (Salkind, 2010b). In order to establish a strong internal validity, researchers have to rule out the alternative explanations for the change in the dependent variable (Frankfort-Nachmias et al., 2015). The purpose of this quantitative cross-sectional study using a survey and MLR was to examine whether a relationship exists between the response variable and the predictor variables in real setting condition. In order to reduce threats to the internal validity I used MLR (Field, 2013).

Construct Validity

Construct validity is the evidence of validity that a researcher collects and applies to support the interpretation and use of test scores as measures of a specific construct (Salkind, 2010a). Construct validity encompasses content and face validity, criterion-related validity, and discriminant validity (Field, 2013). Discriminant validity is the degree to which a scale can be discriminated from other scales (Dawson, 2017). Construct validity means whether the scores of a test or instruments measure the specific construct they designed to measure (Salkind, 2010a; Myers, 2013). I intended to examine if a relationship exists among employee's resistance to CRM system implementation, the employee's readiness for CRM system, prerequisites for CRM system, age, and gender. I tested the innovation-decision process theory. As discussed earlier, all the instruments I used were highly valid and reliable scales, the RTC scale, OCRBS scale, the OCTAPACE profile, and CRM capability scale. The existing literature substantiated the use of these instruments with employees in different organizational settings (Oreg, 2006; Armenakis et al., 2007; Solkhe, 2013). These scales are expected to measure the constructs that were designed to measure. I assessed the internal reliability of the scales by conducting a Cronbach's alpha in SPSS to examine whether the scales have sufficient internal reliability (Field, 2013). I used a PCA to assess the construct validity. The internal consistency of a measure means the scores on each instrument items must correlate highly with the total instrument score (Myers, 2013).

Ethical Procedures

It is important for a researcher to adhere to the ethical standards of the research process. I adhered to all ethical standards. I considered all the ethical standards related to research process including informed consent, voluntary participation, confidentiality and privacy of the participants (Lavrakas, 2008). In order to avoid violations of the ethical standards, I followed the key principles of human subject research (Lavrakas, 2008). First, I asked the participants to participate voluntary. I included an informed consent form in the invitation e-mail that sent to all participants to decide whether to participate or not. I clearly communicated to the participants the purpose of my study, the benefits of participation, and any potential risks associated with my study (Kalof et al., 2008). Further, I provided the participants an opportunity to withdraw from my study if and when they decide to do so. I disclosed my identity to the participants. By doing so, I was able to ensure that I complied with the ethical standards related to the research process.

To encourage honest responses, I maintained confidentiality of my study. Data were collected through Survey Monkey platform. SurveyMonkey is a copyright web-based platform for data collection (SurveyMonkey, 2016). The website includes information about the measures the company has taken to maintain confidentiality of the respondents. The company adopts appropriate policies and procedures to ensure privacy, security, confidentiality, and integrity of the survey content (SurveyMonkey, 2016). This information is available in the Privacy Policy and Security statement (SurveyMonkey, 2016). To enhance the Internet security to avoid doing harm to the potential participants, a researcher has to enact anonymous response option and encryptions (SurveyMonkey,

2016). However, I did not directly collect data from the participants. SurveyMonkey Audience collected the data. I ensured voluntary participation.

Furthermore, I kept all the information related to my study in a secure place. Finally, I assured the anonymity of the participants as SurveyMonkey Audience did not provide information about the participants. Finally, I considered ethical issues regarding writing and dissemination of the final research report such as presenting the research findings accurately. I considered all these measures to ensure that I conduct my study ethically.

Summary

In this chapter, I presented an overview of the research methods that I used to guide the research project and a rationale for choosing a research method for validation purposes. I described the survey designs, selection process of the potential participants, and research procedures. I described the research question and hypotheses, the operational definitions, and the instrumentation. I also addressed the potential threats to my study. Finally, I presented the measures that I have taken to ensure adherence to the ethical standards relate to the research process. In Chapter 4, I discuss data analysis and the research findings.

Chapter 4: Results

The purpose of this quantitative cross-sectional study using a survey and MLR was to examine the factors that facilitate CRM system implementation. The response variable was employee's resistance to CRM system implementation. The predictor variables were the following: (a) the culture of the organization, (b) employee's readiness for CRM system implementation (c) prerequisites CRM system implementation, (d) age, and (e) gender.

The research question was, what is the relationship among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender?

The research hypotheses were as follows:

H_0: There is no relationship among the response variable (employee's resistance to CRM system implementation) and the set of the predictors (the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender).

H_a: There is a relationship between the response variable (employee's resistance to CRM system implementation) and at least one of the predictors (the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender).

In this chapter, I discuss the data collection process, demographic characteristics, descriptive analysis, MLR, hypotheses testing, and findings.

Pilot Study

I started data collection after I received Walden University's Institutional Review Board approval. I conducted a pilot study to ensure that the respondents understood the questionnaire after instrument adaptation. For the pilot study, data were collected via a self-administered online survey using the SurveyMonkey platform for 20 days from July 1, 2019 to July, 20 2019. The SurveyMonkey Audience sent an invitation to full-time customer service employees using CRM system working in the U.S. telecommunications industry. Fifty employees completed the survey. The pilot study showed that the participants understood the survey and responded appropriately to the questions. I did not make changes to the instruments as a result of the pilot study.

Data Collection

I conducted the main study between July 20, 2019 and September 5, 2019. Data were collected via a self-administered online survey through SurveyMonkey from full-time customer service employees using a CRM system in the U.S. telecommunications industry. The number of respondents to the survey was 92; however, only 79 records were complete. Although the minimum required sample size was 77 participants, I utilized the 79 records for the analysis.

Validity and Reliability of the Instrument

Before I conducted the descriptive statistics and regression analysis, I performed a validity and reliability assessment of each scale because the number of the statements in each scale was reduced to avoid a long survey and to adhere to the SurveyMonkey

Audience criteria regarding the number of questions in the survey. To assess the validity and reliability of each scale, I conducted PCA and computed Cronbach's alpha.

First, I conducted a PCA on the 10 items of the RTC scale with Varimax rotation. Table 13 shows that the Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .829 which is above the acceptable limit of .5 (Field, 2013), and the Bartlett's test of sphericity measured 530.710, with degrees of freedom = 45, and $p = .05$. Based on these tests, the sample size was considered sufficient for the PCA, and the overall correlations within a correlation matrix were significant. An initial analysis was run to obtain eigenvalues for each factor in the data. Two factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 67.996% of the variance. The determinant value was .001 which suggested a lack of multicollinearity among items. The scree plot showed two values above the criterion value of 1 (see Appendix D).

Table 14 shows that the affective resistance items (1, 2, 4, and 5), and the behavioral resistance items (1, 2, 3, 4) were loaded on component 1 suggesting they measured the general resistance to change attitudes. Table 14 also shows that the reversed items of affective resistance and behavioral resistance loaded on component 2 suggesting they may measure affective resistance.

Table 13

Results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of RTC Scale

KMO and Bartlett's Test		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.829
Bartlett's Test of		530.710
Sphericity	*df*	45
	Sig.	.000

Table 14

Factor Loading for PCA with Varimax Rotation of RTC Scale

	Component	
	1	2
Behavioral 2	.924	
Behavioral 1	.889	
Behavioral 3	.844	
Affective 4	.827	
Behavioral 4	.806	
Affective 5	.700	
Affective 1	.607	
Affective 2	.559	
Behavioral 5 reversed		.888
Affective3 reversed		.871

Next, I conducted a reliability test for the items loaded on each component. Table 15 shows that items loaded on component 1 had a high reliability level with a Cronbach's alpha = .908. Items loaded on component 2 have a Cronbach's alpha = .779. Overall the scale was valid and reliable.

Table 15

Cronbach's Alpha Reliability Statistics of Items Loaded on Component 1and 2

Component	Cronbach's Alpha	No. of Items
1	.908	8
2	.779	2

I conducted a PCA on the 15 items of the OCRBS scale with Varimax rotation. Table 16 shows that the Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .896, and the Bartlett's test of sphericity measured 1097.235, with degrees of freedom = 105 and p = .05. Based on these tests, the sample size was

considered sufficient for the PCA, and the overall correlations within the correlation matrix were significant. I ran an initial analysis to obtain eigenvalues for each factor in the data two factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 72.20% of the variance. The determinant was 0.000000249 indicated absence of multicollinearity among the items. The scree plot showed two values were above the eigenvalue 1 (see Appendix D).

Table 17 shows that 10 items loaded on component 1 were tightly correlated suggesting they measure general readiness for CRM system implementation. Table 17 also shows that 5 items (principal support item 7, and employees' valence items 12, 13, 14, and 15) loaded on component 2 suggesting they measure employees' valence readiness for CRM system implementation.

Table 16

Results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of OCRBS Scale

KMO and Bartlett's test		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.896
Bartlett's Test of Sphericity		1097.235
	df	105
	Sig.	.000

Table 17

Factor Loading for PCA with Varimax Rotation of OCRBS Scale

	Component	
	1	2
Efficacy 3	.886	
Efficacy 5	.881	
Efficacy 4	.872	
Principal Support 4	.862	
Principal Support 6	.812	
Efficacy 2	.800	
Principal Support 5	.740	.441
Principal Support 3	.731	
Principal Support 1	.679	.526
Efficacy 1	.674	
Valence 4		.854
Valence 3		.830
Valence 2	.484	.696
Principal Support 2	.406	.678
Valence 1	.509	.669

Next, I conducted a reliability test for the items loaded on each component. Table 18 shows that items loaded on component 1 had an excellent reliability level with a Cronbach's alpha = .955. Items loaded on component 2 have a high Cronbach's alpha = .869. Overall the scale was valid and reliable.

Table 18

Cronbach's Alpha Reliability Statistics of Items Loaded on Component 1 and 2

Component	Cronbach's Alpha	No. of Items
1	.955	10
2	.869	5

I conducted a PCA on the 16 items of OCTAPACE scale with Varimax rotation. Table 19 shows that the Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .710, and the Bartlett's test of sphericity measured 343.589, with degrees of freedom = 120, and p = .05. Based on these tests, the sample size was considered sufficient for the PCA, and the overall correlations within the correlation matrix were significant. I ran an initial analysis to obtain eigenvalues for each factor in the data four factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 56.695% of the variance. The determinant was .007 indicated the absence of multicollinearity among the items. The scree plot showed four values above the criterion eigenvalue 1(see Appendix D).

Table 19

Results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of OCTAPACE Scale

KMO and Bartlett's test		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.710
Bartlett's Test of Sphericity		343.589
	df	120
	Sig.	.000

Table 20 shows that 5 items loaded on component 1 suggesting they measured authenticity and trust, and 5 items loaded on component 2 suggesting they measured confrontation and pro-action. Table 20 also shows 3 items loaded on component 3 suggesting they measured experimentation and collaboration, and 2 items loaded on component 4 suggesting they measured openness.

Table 20

Factor Loading for PCA with Varimax Rotation of OCTAPACE Scale

	Components			
	1	2	3	4
Authenticity 1 reversed	.744			
Trust 2 reversed	.725			
Autonomy 1 reversed	.627			
Collaboration 1 reversed	.585			
Authenticity 2	-.501			
Pro-action 2		.712		
Openness 2		.674		
Pro-cation 1		.611		
Confrontation 2		.587	.445	
Trust 1		.569		
Experimentation 2 reversed				
Autonomy 2			.756	
Experimentation1			.747	
Collaboration2			.612	
Confrontation 1 reversed				.662
Openness 1 reversed				.638

Next, I conducted a reliability test for the items loaded on each component. Table 21 shows that items loaded on component 1 had a good reliability level with a Cronbach's alpha = .711. Items loaded on component 2 have a Cronbach's alpha = .674. Items loaded on component 3 have a Cronbach's alpha = .627. Items loaded on component 4 have a Cronbach's alpha = .373. Although the Cronbach's alphas, .627 and .373, were below .7, Field (2013) stated low reliability values of some construct are acceptable. In addition, I only used one part of the OCTAPACE scale which could be the reason for the low reliability level. I concluded that the scale was valid and reliable.

Table 21

Cronbach's Alpha Reliability of Items Loaded on the Four Components

Component	Cronbach's Alpha	No. of Items
1	.689	9
2	.456	5
3	.711	4
4	.381	2

Finally, I ran a PCA on the 9 items of CRM capabilities scale with oblimin rotation. Table 22, shows that the Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = 860, and the Bartlett's test of sphericity measured 458.385 with degrees of freedom = 36 and p = .05. Based on these tests, the sample size was considered sufficient for the PCA, and the overall correlations within the correlation matrix were significant. I ran an initial analysis to obtain eigenvalues for each factor in the data. Two factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 70.546% of the variance. The determinant value was .002, which suggests a lack of multicollinearity among the items. The scree plot showed three values above the criterion value of 1(see Appendix D).

Table 23 shows that 6 items loaded on component 1suggesting they measured interaction management capability, and 3 items loaded on component 2 suggesting they measured upgrading capability.

Table 22

Results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of CRM Capabilities Scale

KMO and Bartlett's test		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.860
Bartlett's Test of Sphericity		458.385
	df	36
	Sig.	.000

Table 23

Factor Loading for PCA with Oblimin Rotation of CRM Capabilities Scale

	Component	
	1	2
Interaction 1	.843	
Interaction 2	.827	
Interaction 3	.756	
Interaction 5	.699	
Interaction 4	.515	
Upgrading 1	.515	
Upgrading 2		-.887
Upgrading 4		-.852
Upgrading 3		-.814

Next, I conducted a reliability test for the items loaded on each component. Table 24 shows that items loaded on component 1 had a high reliability level with a Cronbach's alpha = .883, and the items loaded on component 2 had also a high reliability level with a Cronbach's alpha = .867. Overall, the scale was valid and reliable.

Table 24

Cronbach's Alpha Reliability Statistics of Items Loaded on Component 1 and 2

Component	Cronbach's Alpha	No. of Items
1	.883	6
2	.867	3

Study Results

Descriptive Statistics

I performed descriptive analysis for all the variables. I calculated the frequencies for the dummy-coded variables age and gender. Tables 25 and 26 display the frequency counts for gender and age respectively.

Table 25

Gender

	Frequency	Percent
Female	63	79.7
Male	16	20.3
Total	79	100.0

Table 26

Age

	Frequency	Percent
Group1	21	26.6
Group2	37	46.8
Group3	18	22.8
Group4	3	3.8
Total	79	100.0

I ran descriptive statistics for each of the four continuous predictor variables (X_1, X_2, and X_3) and the response variable (Y). Table 27 displays the descriptive statistics: minimum, maximum, means, and standard deviations for the variables resistance to CRM system implementation (Y) the culture of the organization (X_1) employee's readiness for CRM system implementation (X_2), and prerequisites for CRM system implementation (X_3).

Table 27

Descriptive Statistics for Y, X_1, X_2, and X_3

	N	Minimum	Maximum	Mean	Std. Deviation
Y	79	1.0	6.7	2.884	.9921
X_1	79	1.44	3.00	2.2175	.35946
X_2	79	1	7	4.74	1.223
X_3	79	1	5	3.72	.843
Valid N (listwise)	79				

Two-Factor Interactions

I analyzed the two-factor interactions between pairs of the predictor variables. A two-factor interaction means that the relationship between one predictor variable and the response variable varies depending on the value of another predictor variable (Preacher, Curran, & Bauer, 2006). I calculated 25 interaction terms as the product of each pair of the predictor variables. Table 32 shows the interactions.

Table 28

Interaction Variables

	X_1	X_2	X_3	X_4	X_5	X_6	X_7
X_1	*	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}
X_2	X_8	*	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}
X_3	X_9	X_{14}	*	X_{19}	X_{20}	X_{21}	X_{22}
X_4	X_{10}	X_{15}	X_{19}	*	*	*	X_{23}
X_5	X_{11}	X_{16}	X_{20}	*	*	*	X_{24}
X_6	X_{12}	X_{17}	X_{21}	*	*	*	X_{25}
X_7	X_{13}	X_{18}	X_{22}	X_{23}	X_{24}	X_{25}	*

Note the symbol * = not applicable interaction

Testing MLR Assumptions

I conducted a preliminary MLR to test the regression assumptions of linearity, independence of errors, homoscedasticity, normal distribution of the errors, and absence of multicollinearity. I assessed the assumption of normality of the errors using a normal probability plot. As shown in Figure 1, there was a slight deviation from the ideal diagonal regression line, yet the points more or less fall on the regression line indicating a normal distribution of the errors.

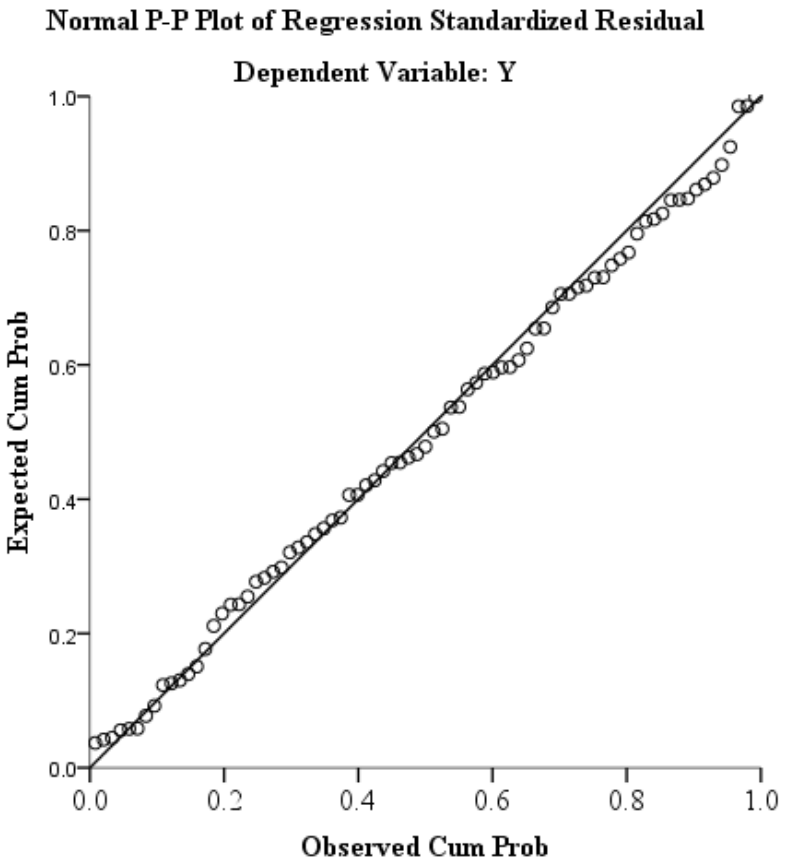

Figure 1. Normal probability plot of regression standardized residuals to assess the normality of the residuals.

I diagnosed the assumption of linearity by scatterplots of the outcome variable and each of the five predictor variables as seen in Figures 2 to 8. No nonlinear patterns were evident. For the dummy-coded variables, age and gender, the relationship with the response variable was expected to be nonlinear (Aneshensel, 2002).

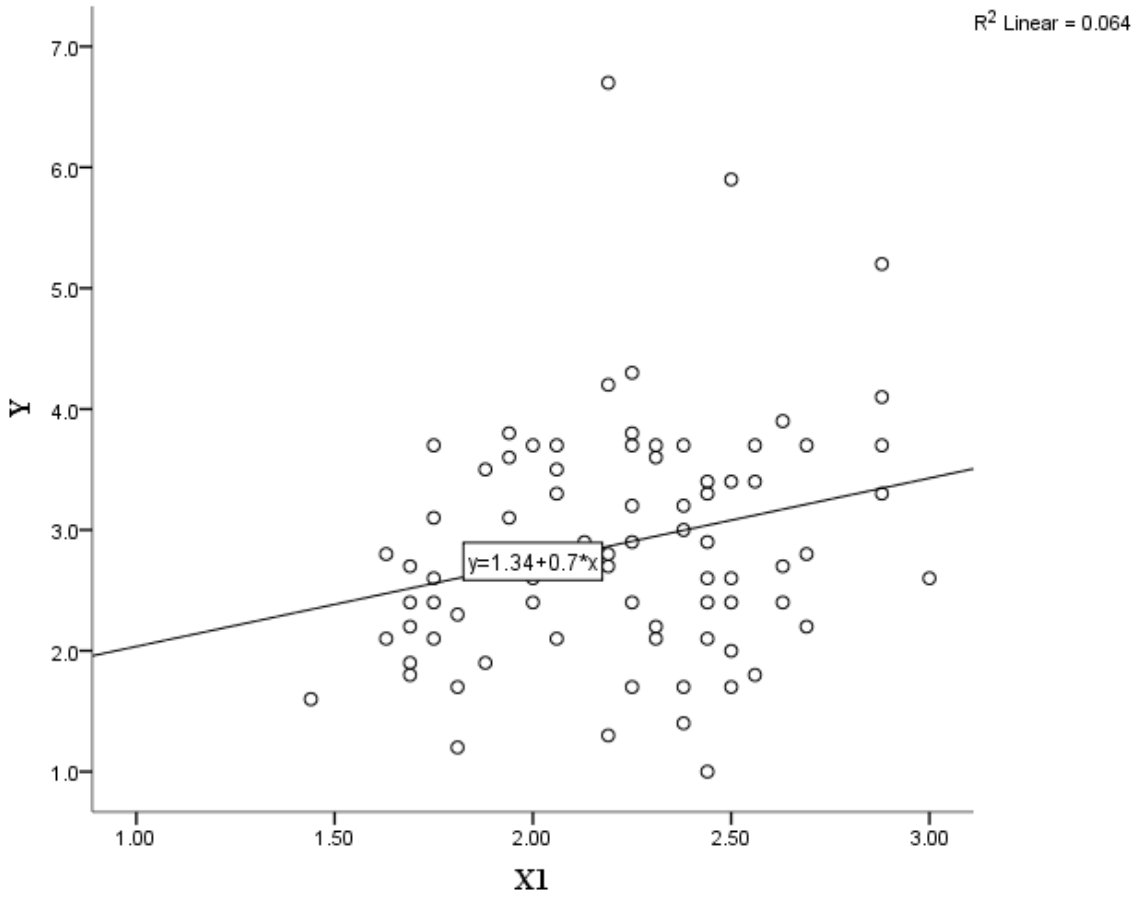

Figure 2. Scatterplot depicting the relationship between the predictor variable, the culture of the organization (X_1), and the response variable (Y).

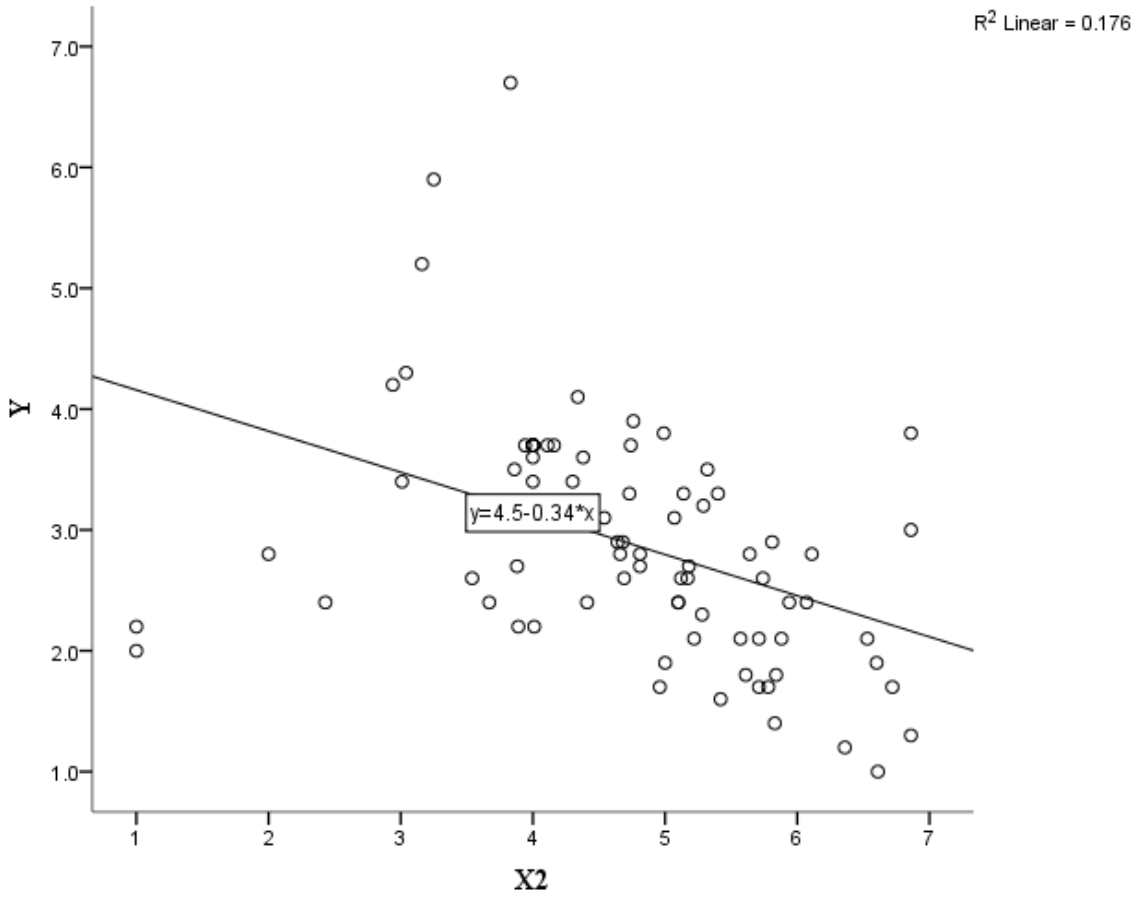

Figure 3. Scatterplot depicting the relationship between the predictor variable, readiness for CRM system implementation (X_2), and the response variables (Y).

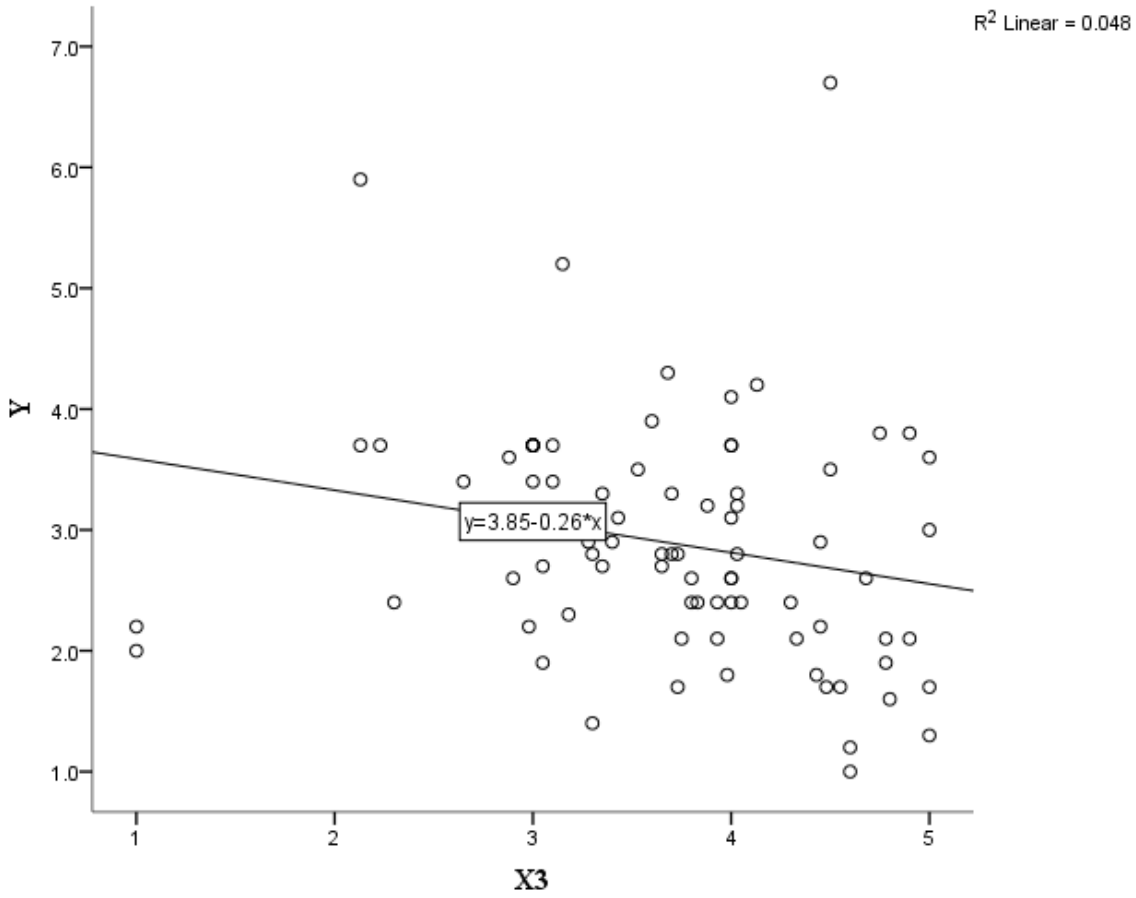

Figure 4. Scatterplot depicting the relationship between the predictor variable, prerequisites for CRM system implementation (X_3), and the response variable (Y).

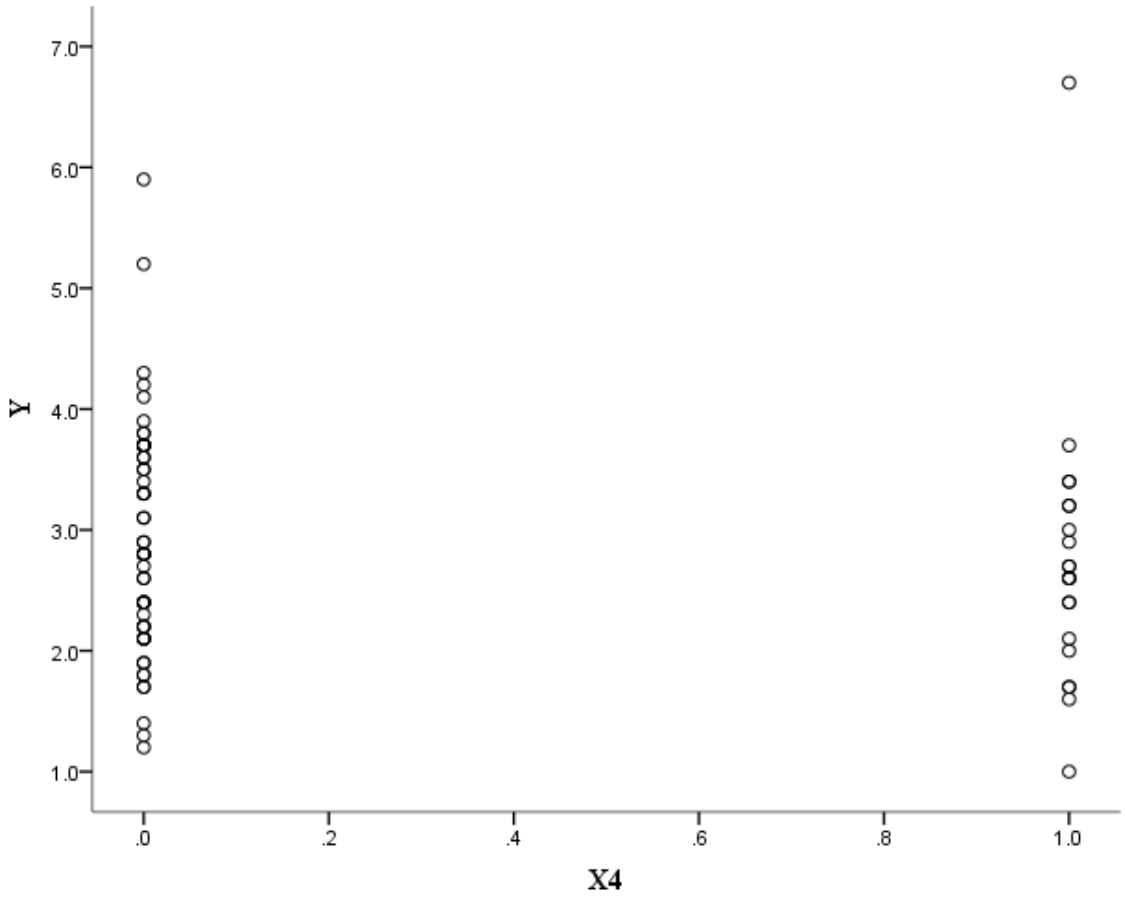

Figure 5. Scatterplot depicting the relationship between the predictor variable (X_4), and the response variable (Y).

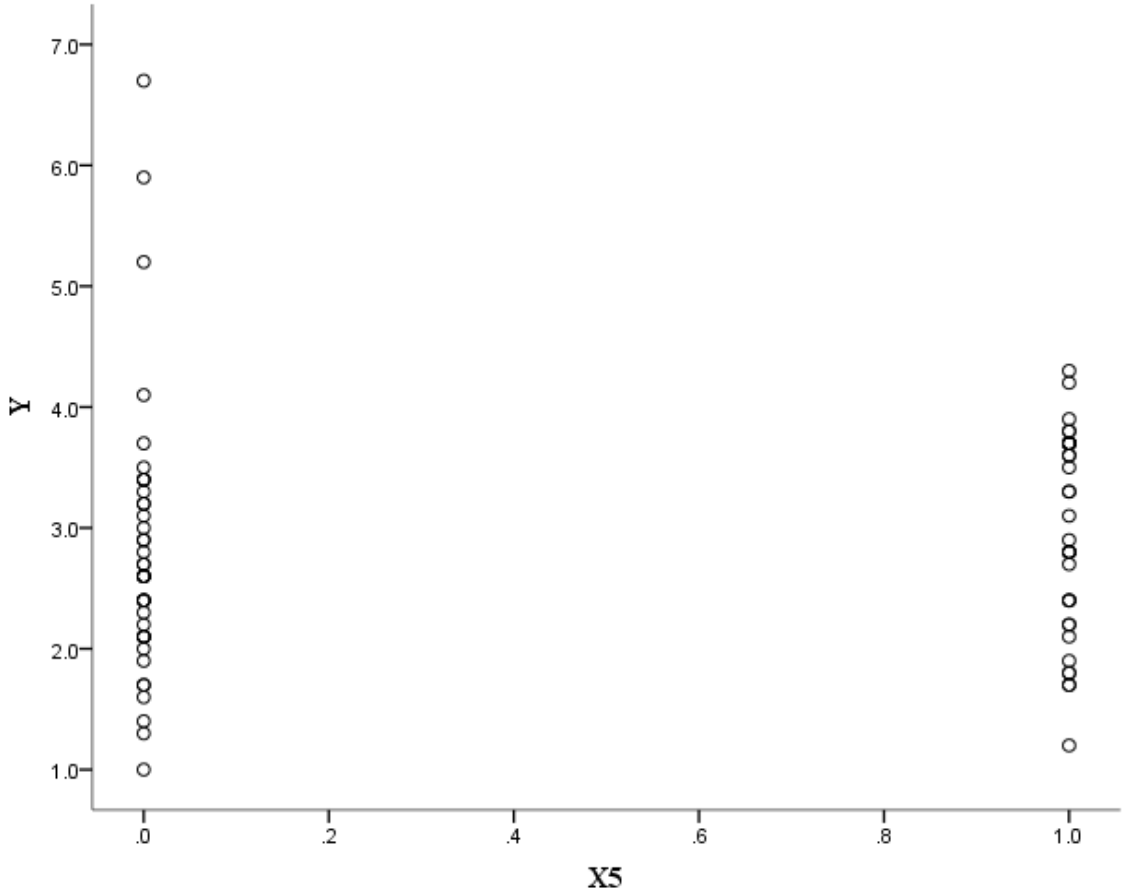

Figure 6. Scatterplot depicting the relationship between the predictor variable (X_5), and the response variable (Y).

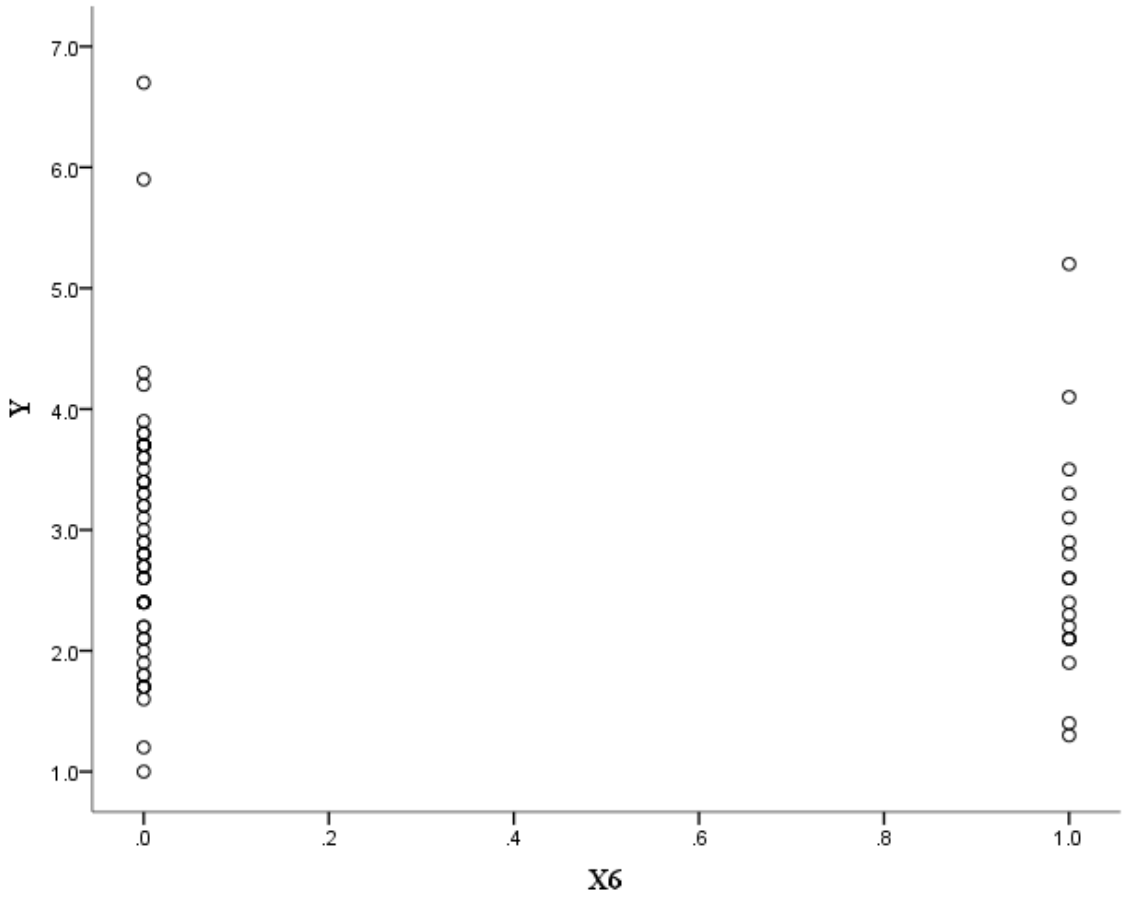

Figure 7. Scatterplot depicting the relationship between the predictor variable (X_6) and the response variable (Y).

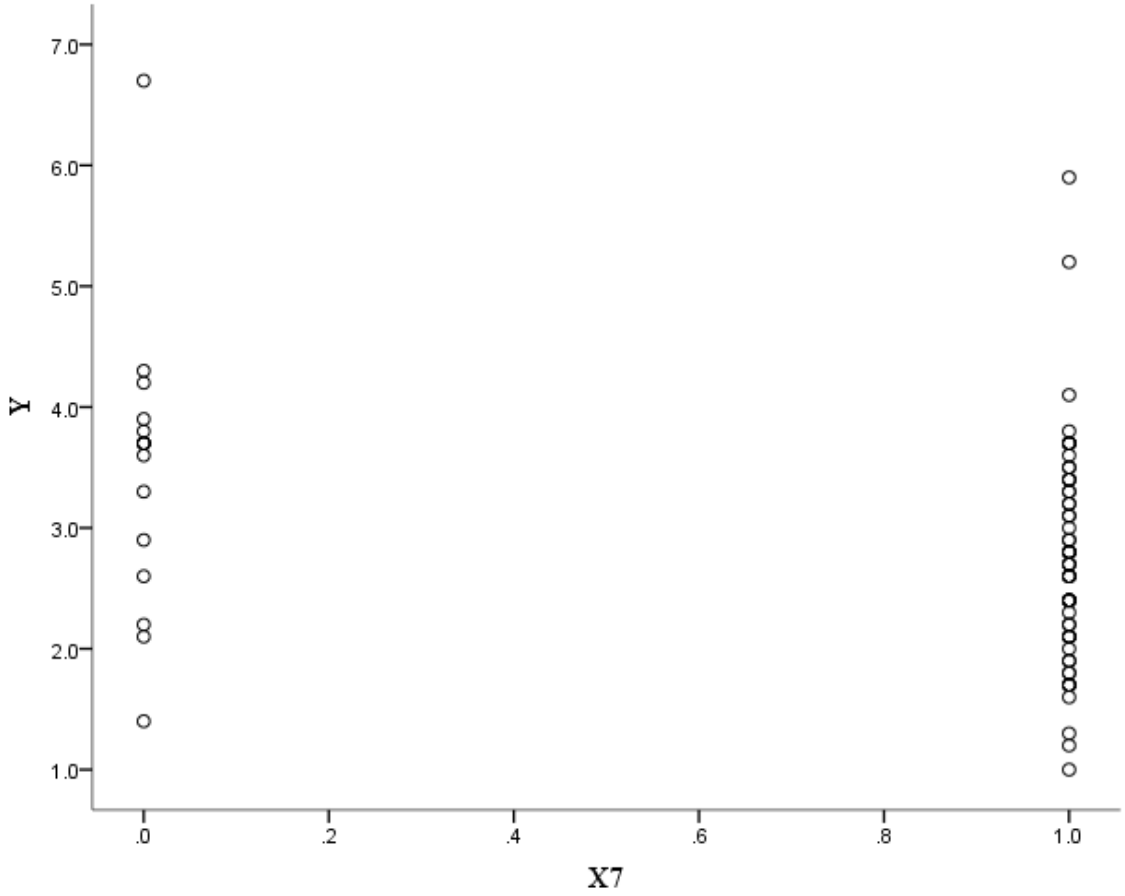

Figure 8. Scatterplot depicting the relationship between the predictor variable, gender (X_7), and the response variable (Y).

I evaluated the assumption of homoscedasticity by conducting Levene's test between the response variable and each of the predictor variables. Appendix E shows the results of Levene's test. The *p* values show that there was no significant violation except the prerequisites for CRM system implementation (X_3). However, I continued the analysis with the variable X_3 for the following reasons. First, Berry (1993) stated that heteroscedasticity is expected in cross-sectional studies and can result from measurement error in the response variable. It is reasonable to detect heteroscedasticity since my study

is a cross-sectional survey study. Further, Berry and Feldman (1985) suggested that the coefficient estimators of the ordinary least square regression, MLR, can be unbiased even with heteroscedasticity in certain situations. Some of these conditions are the unit of analysis being used (individuals) and the interaction between a predictor variable and other predictor variables excluded from the analysis (Berry & Feldman, 1985). I used individuals as a unit of analysis. I assumed the possible cause of the heteroscedasticity is the interaction of the predictor variable, prerequisites for CRM system implementation, with other predictor variables not included in the analysis as indicated in further analysis. In addition, the visual examination of homoscedasticity, the scatterplot of the predicted values versus the residuals for the response variable, Figure 9, shows that the scores were randomly scattered around the regression line.

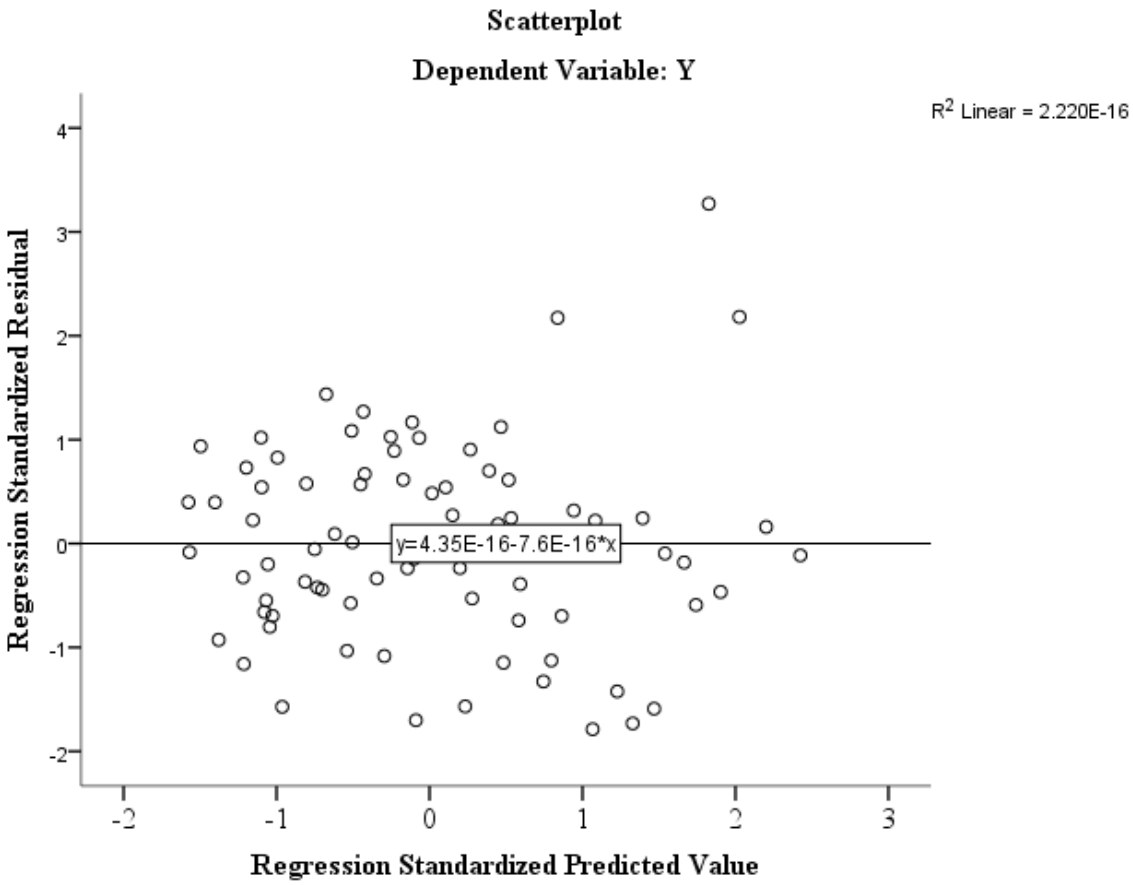

Figure 9. Scatterplot of the predicted values versus the residuals for the response variable (*Y*).

I assessed the assumption of independence of errors by a Durbin Watson test. Table 30, the model summary, shows that the value of Durbin Watson was 1.978 which is close to 2 suggesting that the assumption of independence of errors was met. A value less than 1 or more than 3 suggests a problem and the closer to 2 the better (Field, 2013).

Table 29

ANOVA with All Predictor Variables

Model		*df*	Mean Square	*F*	Sig.
1	Regression	7	3.781	5.337	.000[b]
	Residual	71	.708		
	Total	78			

Table 30

Model Summary of MLR with All Predictor Variables

Model	*R*	*R* Square	Adjusted *R* Square	Durbin-Watson
1	.587[a]	.345	.280	1.978

The final assumption for the regression that must be met is the absence of multicollinearity among predictor variables. I assessed multicollinearity by VIFs which show if a predictor is strongly correlated with other predictors (Allen, 2017, Field, 2013). A VIF value of 1 suggests no correlation among variables and a VIF below 10 is acceptable (Allen, 2017). Table 31 shows the values of VIF were less than 10 indicating that none of the predictors was highly correlated with other predictors. The three dummy variables for age were expected to have some correlation because of the way they are coded; but none exceeded 10.

Table 31

First MLR with All Predictor Variables

Model		*B*	Std. Error	Beta	*t*	Sig.	VIF
1	(Constant)	4.040	.951		4.248	.000	
	X_1	0.560	.274	.203	2.043	.045	1.070
	X_2	-0.384	.111	-.474	-3.472	.001	2.016
	X_3	0.280	.167	.238	1.678	.098	2.174
	X_4	-1.107	.552	-.496	-2.006	.049	6.629
	X_5	-0.997	.541	-.505	-1.841	.070	8.136
	X_6	-1.225	.554	-.521	-2.212	.030	6.019
	X_7	-0.724	.247	-.295	-2.936	.004	1.096

MLR and Model-Building

I started the model-building process by running best-subsets regression using PhStat in Excel with all predictor variables (X_1, X_2, X_3, X_4, X_5, X_6, and X_7) to determine which of the models was the best using Mallows' C_p, and adjusted R^2. The results seen in Appendix F show that the best model based on Mallows' $C_p \leq k + 1$, where k is the number of parameters, and the highest adjusted $R^2 = 0.280$, was the model that includes all the predictor variables. Therefore, based on the best-subset analysis, I did not eliminate any predictor variables from consideration.

I ran MLR using the XLStat Best Model method with all predictor variables X_1, X_2, X_3, X_4, X_5, X_6, and X_7.Table 32 shows that the predictor variables X_1, X_2, X_4, X_6, and X_7 were significant, p values were $< .05$ while X_3 and X_5 were nearly significant, p values $< .10$.

Table 32

Results of MLR Using XLStat Best Model with All Predictor Variables

Source	Value	Standard error	*t*	Pr > |t|
Intercept	4.040	0.951	4.248	<0.0001
X_1	0.560	0.274	2.043	0.045
X_2	-0.384	0.111	-3.472	0.001
X_3	0.280	0.167	1.678	0.098
X_4	-1.107	0.552	-2.006	0.049
X_5	-0.997	0.541	-1.841	0.070
X_6	-1.225	0.554	-2.212	0.030
X_7	-0.724	0.247	-2.936	0.004

Table 33 shows that X_2 and X_7 had a moderate correlation with Y. The predictor variables X_2 and X_3 exhibited possible multicollinearity, while X_4, X_5, and X_6 exhibited some multicollinearity based on the correlation matrix and the VIFs. At this point, I did not eliminate any predictors for multicollinearity.

Table 33

Correlation Matrix of MLR Using XLStat Best Model with All Predictor Variables

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	Y
X_1	1	-0.152	-0.178	-0.033	0.036	-0.085	0.078	0.252
X_2	-0.152	1	0.694	0.017	0.003	0.035	0.176	-0.420
X_3	-0.178	0.694	1	0.073	0.106	-0.072	0.137	-0.220
X_4	-0.033	0.017	0.073	1	-0.565	-0.327	0.161	-0.086
X_5	0.036	0.003	0.106	-0.565	1	-0.510	-0.095	0.101
X_6	-0.085	0.035	-0.072	-0.327	-0.510	1	-0.102	-0.123
X_7	0.078	0.176	0.137	0.161	-0.095	-0.102	1	-0.309
Y	0.252	-0.420	-0.220	-0.086	0.101	-0.123	-0.309	1

Table 34 shows that model 7 met Mallows' C_p guidelines ($C_p \leq k+1$). Model 6 may have been viable. Based on the adjusted R^2, model 7 was the best model with

adjusted R^2 = .280. The model included all the predictor variables. The results were same as those of the best-subset regression.

Table 34

Model Summary of MLR with Best Model with All Predictor Variables

No. of Variables	Variables	R^2	Adjusted R^2	Mallows' Cp
1	X_2	0.176	0.165	14.278
2	X_2, X_7	0.233	0.213	10.099
3	X_1, X_2, X_7	0.281	0.252	6.954
4	X_1, X_2, X_3, X_7	0.297	0.259	7.183
5	X_1, X_2, X_3, X_6, X_7	0.308	0.260	8.027
6	X_1, X_2, X_4, X_5, X_6, X_7	0.319	0.262	8.815
7	X_1, X_2, X_3, X_4, X_5, X_6, X_7	0.345	0.280	8.000

After that I ran the XLStat Best Model analysis with all predictor variables and interaction terms. The results (see Appendix G) showed that many models including 20-25 were viable based on Mallows' C_p. The best model based on the highest adjusted R^2 = .593 was the model with predictor variables X_2, X_4, X_5, X_6, and X_7. Based on the analysis, I decided not to remove any of the predictors from consideration at this point.

I ran a stepwise regression in XLStat with all predictor variables and interaction terms. The selection criteria were entry if $p < .05$ and eliminate if p value > .10. XLStat selected the model with the highest adjusted R^2. Table 35 showed the resulting model included one predictor variable (X_1) and one interaction term (X_{18}) with adjusted R^2 = .233.

Table 35

Model Summary of Stepwise MLR with All Predictor Variables and Interaction Terms

No. of Variables	Variables	MSE	R^2	Adjusted R^2
2	X_1 / X_{18}	0.755	0.253	0.233

I also ran a forward MLR in XLStat with all predictor variables and interaction terms. Table 36 shows the best model included the predictor variable X_1 and the interaction term X_{18} with adjusted R^2 = .233. The results were the same as the stepwise regression.

Table 36

Model Summary of Forward MLR with All Predictor Variables and Interaction Terms

No. of Variables	Variables	MSE	R^2	Adjusted R^2
2	X_1 / X_{18}	0.755	0.253	0.233

After that, I ran a backward regression using XLStat with all predictor variables and interaction terms. XLStat retained the predictor variables X_1, X_2, X_4, X_6, and the interaction terms X_{23} and X_{24} with adjusted R^2 = .378.

Table 37

Model Summary of Backward MLR with All Predictor Variables and Interaction Terms

No. of Variables	Variables	R^2	Adjusted R^2	Mallows' C_p
21	X_1/ X_2/ X_4/ X_6/ X_{23}/ X_{24}	0.426	0.378	5.303

In all the analyses, I considered the predictors to include or eliminate from consideration based on the significance of each predictor variable, while balancing Mallows' C_p with the adjusted R^2. I also considered model parsimony to generate the

highest or acceptable adjusted R^2, model fit. According to Field (2013), each predictor variable requires 10 to 15 samples. For a sample of 79, the model should include no more than five to eight predictors.

Based on these analyses, I concluded that X_1, X_2, and X_7 were significant predictors. I eliminated from consideration the predictor variable X_3 because it was not significant in all XLStat models. The three age-related dummy variables (X_4, X_5, and X_6) did not show significance consistently in all the models. Therefore, I eliminated from consideration X_4, X_5, and X_6 and the interaction terms X_{23} and X_{24} because age was part of each of them. The interaction terms X_8, X_{13}, and X_{18} were products of the three significant variables X_1, X_2, and X_7. I considered the interaction terms on a case-by-case basis.

I conducted MLR analysis using the XLStat Best Model method with X_1, X_2, and X_7. Table 38 shows the model included the three predictor variables X_1, X_2, and X_7 with the adjusted R^2 = .252.

Table 38

Model summary of Best Model MLR with All Predictor Variables X_1, X_2, and X_7

No. of Variables	Variables	MSE	R^2	Adjusted R^2
3	X_1 / X_2 / X_7	0.736	0.281	0.252

I conducted a MLR analysis using the SPSS Enter method with the predictor variables X_1, X_2, and X_7. Table 39 shows that the three predictor variables X_1, X_2, and X_7 were significant predictors. Table 40 shows the model was significant F (3, 75) = 9.750. Table 41 shows the adjusted R^2 = .252.

Table 39

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, and X_7

		B	Std. Error	Beta	*t*	Sig.	VIF
1	(Constant)	3.353	.772		4.344	.000	
	X_1	0.612	.275	.222	2.225	.029	1.036
	X_2	-0.275	.082	-.339	-3.360	.001	1.062
	X_7	-0.654	.245	-.267	-2.664	.009	1.044

Table 40

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, and X_7

Model		*df*	Mean Square	*F*	Sig.
1	Regression	3	7.180	9.750	.000[b]
	Residual	75	.736		
	Total	78			

Table 41

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, and X_7

Model	*R*	*R* Square	Adjusted *R* Square	Durbin-Watson
1	.530[a]	.281	.252	1.992

After that, I conducted a series of MLR analyses using different XLStat and SPSS methods to evaluate the interaction terms. I ran MLR using SPSS the SPSS Enter method and XLStat Best Model method with X_1, X_2, X_7, and the interaction terms X_8, X_{13}, and X_{18}. Table 42 shows that the predictor variables and interaction terms were not significant, *p* values were > .10. Table 43 shows the model was significant F (6, 72) = 5.108. Table 44

shows the adjusted R^2 = .240. The model had no significant predictors and interaction terms.

Table 42

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7 and Interaction Terms X_8, X_{13}, and X_{18}

		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.094	2.611		.036	.971
	X_1	2.111	1.274	.765	1.657	.102
	X_2	0.239	.521	.294	.458	.648
	X_7	0.545	1.868	.222	.292	.771
	X_8	-0.234	.249	-.691	-.939	.351
	X_{13}	-0.526	.745	-.509	-.707	.482
	X_{18}	-0.020	.205	-.045	-.098	.922

Table 43

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

Model		*df*	*F*	Sig.
1	Regression	6	5.108	.000[b]
	Residual	72		
	Total	78		

Table 44

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

Model	*R*	*R* Square	Adjusted *R* Square
1	.546[a]	.299	.240

Table 45 shows that based on Mallows' C_p, three models were viable. The best model included the predictor variables X_1, X_2, X_7, and the interaction terms X_8, X_{13}, and X_{18} with the adjusted R^2 = .240.

Table 45

Results of Best Model with Predictor Variables X_1, X_2, and X_7, and Interaction Terms X_8, X_{13}, and X_{18}

No. of Variables	Variables	R^2	Adjusted R^2	Mallows' Cp
1	X_{18}	0.198	0.188	7.266
2	X_1, X_{18}	0.253	0.233	3.658
3	X_1, X_8, X_{13}	0.295	0.267	1.363
4	X_1, X_2, X_8, X_{13}	0.298	0.260	3.089
5	X_1, X_2, X_7, X_8, X_{13}	0.298	0.250	5.011
6	X_1, X_2, X_7, X_8 , X_{13}, X_{18}	0.298	0.240	7.000

I ran a stepwise MLR with X_1, X_2, X_7, and the interaction terms X_8, X_{13}, and X_{18}. Table 46 shows the resulting model included the predictor variable X_1 and the interaction term X_{18}, p values were < .05. Table 47 shows the model was significant F (2, 76) = 12.870. Table 48 shows the adjusted R^2 = .233.

Table 46

Results of Stepwise MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

		B	Std. Error	Beta	*t*	Sig.
2	(Constant)	2.203	.645		3.414	.001
	X_{18}	-0.194	.044	-.436	-4.389	.000
	X_1	0.646	.274	.234	2.358	.021

Table 47

ANOVA of Stepwise MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

Model		*df*	*F*	Sig.
2	Regression	2	12.870	.000[c]
	Residual	76		
	Total	78		

Table 48

Model Summary of Stepwise MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

Model	*R*	*R* Square	Adjusted *R* Square
2	.503[b]	.253	.233

I ran a backward MLR in SPSS with X_1, X_2, X_7, and the interaction terms X_8, X_{13}, and X_{18}. Table 49 shows the resulting model included the predictor variable X_1 and the interaction terms X_8 and X_{13}, p values were < .05.Table 50 shows the model was significant F (3, 75) = 10.459. Table 51 shows the adjusted R^2 = .267.

Table 49

Results of Backward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

		B	Std. Error	Beta	*t*	Sig.
4	(Constant)	1.556	.613		2.539	.013
	X_1	1.473	.310	.534	4.751	.000
	X_8	-0.132	.037	-.390	-3.611	.001
	X_{13}	-0.315	.109	-.305	-2.876	.005

Table 50

ANOVA of Backward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

Model		*df*	*F*	Sig.
4	Regression	3	10.459	.000[e]
	Residual	75		
	Total	78		

Table 51

Model Summary of Backward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

Model	R	R Square	Adjusted R Square
4	.543[d]	.295	.267

I ran MLR in SPSS using the forward method with X_1, X_2, X_7, and the interaction terms X_8, X_{13}, and X_{18}. Table 52 shows the resulting model included the predictor variable X_1 and the interaction term X_{18}, p values were < .05. SPSS removed other predictor

variables and interaction terms because they were not significant, p values > .10. Table 53 shows the model was significant F (2, 76) = 12.870. Table 54 shows the adjusted R^2 = .233.

Table 52

Results of Forward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

		B	Std. Error	Beta	*t*	Sig.
2	(Constant)	2.203	.645		3.414	.001
	X_{18}	-0.194	.044	-.436	-4.389	.000
	X_1	0.646	.274	.234	2.358	.021

Table 53

ANOVA of Forward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

Model		*df*	*F*	Sig.
2	Regression	2	12.870	.000
	Residual	76		
	Total	78		

Table 54

Model Summary of Forward MLR with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8, X_{13}, and X_{18}

Model	R	R Square	Adjusted R Square
2	.503[b]	.253	.233

I ran a MLR analysis using the SPSS Enter method with X_1, X_2, X_7, and the interaction terms X_{13}, and X_{18}. Table 55 shows that none of the interaction terms and predictor variables was significant. Table 56 shows the model was significant F (5, 73) = 5.964. Table 57 shows the adjusted R^2 = .241.

Table 55

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_{13} and X_{18}

		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	2.094	1.509		1.387	.170
	X_1	1.093	.669	.396	1.635	.106
	X_2	-0.225	.167	-.277	-1.343	.183
	X_7	1.078	1.778	.439	.606	.546
	X_{13}	-0.618	.738	-.598	-.838	.405
	X_{18}	-0.085	.193	-.191	-.440	.661

Table 56

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_{13} and X_{18}

Model		*df*	*F*	Sig.
1	Regression	5	5.964	.000[b]
	Residual	73		
	Total	78		

Table 57

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_{13} and X_{18}

Model	*R*	*R* Square	Adjusted *R* Square
1	.539[a]	.290	.241

I ran a MLR analysis using the SPSS Enter method with X_1, X_2, X_7, and the interaction terms X_8 and X_{18} to determine the significance of the interaction terms X_8 and X_{18}. Table 58 shows none of the interaction terms and predictor variables was significant, *p* values were > .10. Table 59 shows the model was significant F (5, 73) = 4.510. Table 60 shows the adjusted R^2 = .245.

Table 58

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{18}

		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	0.732	2.442		.300	.765
	X_1	1.786	1.184	.647	1.508	.136
	X_2	0.304	.511	.375	.595	.554
	X_7	-0.585	.964	-.239	-.607	.545
	X_8	-0.257	.246	-.760	-1.044	.300
	X_{18}	-0.026	.205	-.058	-.126	.900

Table 59

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{18}

Model		*df*	*F*	Sig.
1	Regression	5	6.072	.000[b]
	Residual	73		
	Total	78		

Table 60

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{18}

Model	*R*	*R* Square	Adjusted *R* Square
1	.542[a]	.294	.245

I ran a MLR analysis using the SPSS Enter method with X_1, X_2, X_7, and the interaction terms X_8 and X_{13}. Table 61 shows the predictor variable X_1 was nearly significant, p value < .10. Other predictor variables and the interaction terms were not significant, p values > .10. Table 62 shows the model was significant F (5, 73) = 6.212. Table 63 shows the adjusted R^2 = .250.

Table 61

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{13}

		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	.061	2.571		.024	.981
	X_1	2.157	1.178	.781	1.830	.071
	X_2	0.242	.517	.298	.468	.641
	X_7	0.459	1.641	.187	.280	.780
	X_8	-0.242	.233	-.715	-1.039	.302
	X_{13}	-0.529	.739	-.512	-.716	.476

Table 62

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{13}

Model		*df*	*F*	Sig.
1	Regression	5	6.212	.000[b]
	Residual	73		
	Total	78		

Table 63

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Terms X_8 and X_{13}

Model	*R*	*R* Square	Adjusted *R* Square
1	.546[a]	.298	.250

I ran a MLR analysis using the SPSS Enter method with X_1, X_2, X_7, and the interaction term X_{18}. Table 64 shows the predictor variable X_1 was significant, p value <

.05. Other predictor variables and the interaction terms were not significant, *p* values > .10. Table 65 shows the model was significant F (4, 74) = 7.308. Table 67 shows the adjusted R^2 = .244.

Table 64

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{18}

		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	3.093	.924		3.346	.001
	X_1	.585	.281	.212	2.079	.041
	X_2	-0.201	.165	-.248	-1.223	.225
	X_7	-0.209	.894	-.085	-.234	.816
	X_{18}	-0.099	.192	-.223	-.517	.607

Table 65

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{18}

Model		*df*	*F*	Sig.
1	Regression	4	7.308	.000[b]
	Residual	74		
	Total	78		

Table 66

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{18}

Model	*R*	*R* Square	Adjusted *R* Square
1	.532[a]	.283	.244

I ran a MLR analysis using the SPSS Enter method with X_1, X_2, X_7, and the interaction term X_{13}. Table 67 shows the predictor variable X_2 was significant, p value < .05 and the predictor variable X_1 was nearly significant, p values < .10.The predictor variable X_7 and interaction term X_{13} were not significant, p values > .10. Table 68 shows the model was significant F (4, 74) = 7.488. Table 69 shows the adjusted R^2 = .250.

Table 67

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{13}

		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	2.268	1.448		1.566	.122
	X_1	1.140	.657	.413	1.736	.087
	X_2	-0.288	.083	-.355	-3.460	.001
	X_7	0.760	1.616	.310	.470	.639
	X_{13}	-0.647	.731	-.626	-.886	.379

Table 68

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{13}

Model		*df*	*F*	Sig.
1	Regression	4	7.488	.000[b]
	Residual	74		
	Total	78		

Table 69

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_{13}

Model	*R*	*R* Square	Adjusted *R* Square
1	.537[a]	.288	.250

I ran a MLR analysis with X_1, X_2, X_7, and the interaction term X_8. Table 70 shows the predictor variable X_7 was significant, p value < .05 and the predictor variable X_1 was nearly significant, p value < .10. The predictor variable X_2 and the interaction term X_8 were not significant, p values < .10. Table 71 shows the model was significant F (4, 74) = 7.688. Table 72 shows the adjusted R^2 = .255.

Table 70

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_8

		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	0.694	2.406		.288	.774
	X_1	1.842	1.090	.668	1.690	.095
	X_2	0.308	.507	.380	.608	.545
	X_7	- 0.702	.248	-.286	-2.828	.006
	X_8	-0.268	.229	-.791	-1.166	.247

Table 71

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_8

Model		*df*	*F*	Sig.
1	Regression	4	7.688	.000[b]
	Residual	74		
	Total	78		

Table 72

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_7, and Interaction Term X_8

Model	*R*	*R* Square	Adjusted *R* Square
1	.542[a]	.294	.255

Thus far, I performed all combinations of models with X_1, X_2, X_7, and the significant interaction terms X_8, X_{13}, and X_{18}. In all regression models, none of the interaction terms was significant. I concluded that all interaction terms were not significant predictors of the response variables (*Y*).

After that, I ran a regression analysis with the seven predictor variables. Table 73 shows that X_1, X_2, X_4, X_6, and X_7 were significant predictors, *p* values < .05 while X_3 and X_5 were nearly significant, *p* values > .10. The results are similar to those from the XLStat Best Model analysis. Table 74 shows that the model with all predictor variables was a significant predictor of the response variable F (7, 71) = 5.337, p = .000. Table 75 shows the adjusted R^2 = .280.

Table 73

Results of MLR Using SPSS Enter with All Predictor Variables

		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	4.040	.951		4.248	.000
	X_1	0.560	.274	.203	2.043	.045
	X_2	-0.384	.111	-.474	-3.472	.001
	X_3	0.280	.167	.238	1.678	.098
	X_4	-1.107	.552	-.496	-2.006	.049
	X_5	-0.997	.541	-.505	-1.841	.070
	X_6	-1.225	.554	-.521	-2.212	.030
	X_7	-0.724	.247	-.295	-2.936	.004

Table 74

ANOVA Using SPSS Enter with All Predictor Variables

Model		*df*	*F*	Sig.
1	Regression	7	5.337	.000[b]
	Residual	71		
	Total	78		

Table 75

Model Summary of MLR Using SPSS Enter with All Predictor Variables

Model	*R*	*R* Square	Adjusted *R* Square
1	.587[a]	.345	.280

After that, I began to eliminate from consideration the non-significant predictor variables based on the highest *p* value. First, I eliminated X_3 and re-ran the analysis with X_1, X_2, X_4, X_5, X_6, and X_7. Table 76 shows that X_2 and X_7 were significant predictors, *p* values < .05 while X_1 and X_6 were nearly significant predictors, *p* values < .10. The

predictors X_4 and X_5 were not significant p values < .10. Table 77 shows that the model was a significant predictor of the response variable F (6, 72) = 5.615, p = .000. Table 78 shows the adjusted R^2 = .262. The adjusted R^2 was decreased from .280 to .262.

Table 76

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_4, X_5, X_6, and X_7

		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	4.307	.949		4.537	.000
	X_1	0.524	.277	.190	1.893	.062
	X_2	-0.258	.082	-.318	-3.143	.002
	X_4	-0.850	.537	-.381	-1.583	.118
	X_5	-0.733	.524	-.371	-1.397	.167
	X_6	-1.030	.548	-.438	-1.878	.064
	X_7	-0.703	.249	-.287	-2.818	.006

Table 77

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, X_4, X_5, X_6, and X_7

Model		*df*	*F*	Sig.
1	Regression	6	5.615	.000[b]
	Residual	72		
	Total	78		

Table 78

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, X_4, X_5, X_6, and X_7

Model	*R*	*R* Square	Adjusted *R* Square
1	.565[a]	.319	.262

I eliminated the three age-related dummy variables because two of them were not significant (X_4 and X_5), *p* values were > .10. I ran the analysis with the predictor variables X_1, X_2, and X_7. Table 79 shows the three predictor variables were significant, *p* values < .05. Table 80 shows the model was significant F (3, 75) = 9.750. Table 81 shows the adjusted R^2 = .252. The adjusted R^2 was decreased from .262 to .252.

Table 79

Results of MLR Using SPSS Enter with Predictor Variables X_1, X_2, and X_7

		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	3.353	.772		4.344	.000
	X_1	0.612	.275	.222	2.225	.029
	X_2	-0.275	.082	-.339	-3.360	.001
	X_7	-0.654	.245	-.267	-2.664	.009

Table 80

ANOVA Using SPSS Enter with Predictor Variables X_1, X_2, and X_7

Model		*df*	*F*	Sig.
1	Regression	3	9.750	.000[b]
	Residual	75		
	Total	78		

Table 81

Model Summary of MLR Using SPSS Enter with Predictor Variables X_1, X_2, and X_7

Model	*R*	*R* Square	Adjusted *R* Square
1	.530[a]	.281	.252

Based on the analyses, there were two viable models worth consideration. The first model included three significant predictor variables X_1, X_2, and X_7 with adjusted R^2 = .252 and Mallows' C_p = 4. The second model included all seven predictor variables X_1, X_2, X_3, X_4, X_5, X_6, and X_7. X_3 and X_5 were nearly significant, p values < .10, but this model increased the adjusted R^2 to .280 and Mallows' C_p = 8.

I did not rely heavily on stepwise strategies including backward and forward methods for selecting a final predictive model, using them instead as a source of evidence to indicate which predictors were clearly significant or closely nonsignificant. According to Newton and Rudestam (2013), stepwise strategies, including the backward method, are questionable because the outcomes are highly sensitive to early choices about inclusion or exclusion of predictors; and, hence, they often produce incorrect or unreliable outcomes (selection of final predictive models).

Final Predictive Model

Based on the regression analyses, I selected the model with the best combination of Mallows' C_p (< k + 1) and highest adjusted R^2 (.280). Therefore, the final model was the model that included the seven predictor variables (X_1, X_2, X_3, X_4, X_5, X_6, and X_7). The best model included five significant predictors (X_1, X_2, X_3, X_4, X_6, and X_7, p < .05) and

two nearly significant predictors (X_3 and X_5, $p < .10$). The nearly significant predictors were included in the final predictive model because in light of the sample size, it is likely that the two nearly significant predictors were, in fact, significant predictors of *Y*; and their inclusion in the model improved the model fit. In addition, because of the effect size chosen and the *p* values, there is a likelihood that the two nearly significant predictors are in actuality significant predictors.

I ran a final regression analysis using the SPSS Enter method with all predictor variables (X_1, X_2, X_3, X_4, X_5, X_6, and X_7) to examine the resulting regression parameters and ANOVA table. These results mirror the results in Tables 73 to 75, showing that the predictor variables X_1, X_2, X_4, X_6, and X_7 were significant predictors, with *p* values < .05; and the predictor variables X_3 and X_5 were nearly significant with p values < .10. The model was significant, $F(7, 71) = 5.337$ and the adjusted $R^2 = .280$.

Because the final regression model was significant ($p = .000$), the following equation may be used to predict resistance to CRM system implementation, (*Y*):

$$\hat{Y} = 4.040 + 0.560(X_1) - 0.384(X_2) + 0.280(X_3) - 1.107(X_4) - 0.997(X_5) - 1.225(X_6) - 0.724(X_7)$$

The adjusted R^2 represents the amount of variance in the response variable that can be attributed to the regression model. The final model predicts 28% of the variability in the response variable and suggests a moderate correlation among the full set of predictor variables and the response variable. The results also indicate there may be other predictors that contribute to the variation in the response variable.

The positive sign of the coefficients of X_1 and X_3 indicates a positive relationship with the response variable, Y. This means that as X_1 and X_3 increase by one unit, Y increases by an amount equal to their coefficients (0.560 and 0.280 respectively). In contrast, the negative sign of the coefficients of X_2, X_4, X_5, X_6, and X_7 (-0.384, -1.107, -0.997, -1.225, and -0.724 respectively) indicates a negative relationship with the response variable, Y. This means that as X_2, X_4, X_5, X_6, and X_7 increase by one unit, Y decreases by an amount equal to their coefficients. The coefficient of -1.107 for X_4 means the average response for age group 1 is 1.107 lower than for group 4. The coefficient of -0.997 for X_5 means the average response for age group 2 is 0.997 lower than for group 4. The coefficient -1.225 for X_6 means the average response for age group 3 is 1.225 lower than for group 4. Similarly, the average response for female employee is 0.724 lower than for male employee.

Final Model Assumptions

I assessed the assumptions of normality, homoscedasticity, and absence of multicollinearity for the final model. Since the final model was identical to the first model, with all predictors and no two-factor interactions, the tests for assumptions I originally conducted remained valid at this point in the analysis.

Research Question and Evaluation of the Findings

The research question was, what is the relationship among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, and prerequisites for CRM system implementation, age, and gender?

H_0: There is no relationship among the response variable (employee's resistance to CRM system implementation) and the set of the predictors (the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender).

Statistically, $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = 0$ (all coefficients = 0) where β_j represents the *j*th regression coefficient among seven predictors. $\beta_4 = \beta_5 = \beta_6$ were the population coefficients for the three dummy variables of the fourth predictor.

H_a: There is a relationship between the response variable (employee's resistance to CRM system implementation) and at least one of the predictors (the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender).

Statistically: At least one $\beta_j \neq 0$.

The null hypothesis was rejected ($F = 5.337$, $p = .000$). There was sufficient evidence to conclude that the alternate is true, that at least one coefficient is not equal to 0 (that at least one predictor is significant).

The analysis showed that four predictor variables (the culture of the organization, employee's readiness for CRM system implementation, age, and gender) were significant predictors of the response variable (employee's resistance to CRM system implementation). The analysis indicated that a model consisting of all seven predictor variables (the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender) was the best predictive model based on goodness of fit (adjusted R^2).

Summary

The purpose of this quantitative cross-sectional study using a survey and MLR was to examine the factors that facilitate CRM system implementation; specifically to examine a relationship among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender.

In this chapter, I described the demographics of the participants in the study. I checked the validity and reliability of the instruments with PCA and Cronbach's alpha analysis. The instruments were found to be reliable. I also assessed the assumptions of MLR, and all the assumptions were satisfied. I analyzed the two-factor interactions between each pair of predictor variables.

The research question was, what is the relationship among employee's resistance to CRM system implementation, the culture of the organization, the employee's readiness for CRM system implementation, and prerequisites for CRM system implementation, age, and gender?

I performed a series of MLR using different SPSS, PhStat, and XLStat methods including simultaneous regression, best-subsets regression, and stepwise regression to assess all predictor variables and the possible interactions terms to evaluate the possible models. Based on the evidence from this series of MLR analyses and a careful analysis of the significance of each term, the best and final predictive model included seven predictors (X_1, X_2, X_3, X_4, X_5, X_6, and X_7). The results showed the regression model was significant. The results indicated a significant relationship among the response variable

and three predictor variables (X_1, X_2, and X_7). In Chapter 5, I interpret these results and compare them to the existing literature. I describe limitations and recommendations. Further, I discuss implications for positive social change. Finally, I provide implications for research and practice.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative cross-sectional study using a survey and MLR was to examine the factors that facilitate CRM system implementation; specifically to examine relationships among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, employee's age, and employee's gender.

I conducted this study to examine the interrelationships among the factors affecting CRM system implementation. The intent of the research question was to understand which organizational variables including the culture of the organization, readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender are associated with employee's resistance to CRM system implementation.

Data were collected through an online survey and used MLR to determine which of those organizational factors affect employee's resistance to CRM system implementation in the U.S. telecommunications industry. The findings revealed that the culture of the organization, employee's readiness for CRM system implementation, and gender were significantly correlated with employee's resistance to CRM system implementation. The results also indicted that prerequisites for CRM system implementation and age were nearly significant. It is likely that with additional research, and perhaps increased sample size, that these factors would prove to be significant predictors of resistance to CRM system implementation.

Interpretation of Findings

Final Regression Model

The final MLR model included seven predictor variables (X_1, X_2, X_3, X_4, X_5, X_6, and X_7, p = .000). The final predictive regression model was as follows:

$$\hat{Y} = 4.040 + 0.560(X_1) - 0.384(X_2) + 0.280(X_3) - 1.107(X_4) - 0.997(X_5) - 1.225(X_6) - 0.724(X_7)$$

The overall model consisting of all predictor variables is a good predictor of the response variable, employee's resistance to CRM system implementation. The adjusted R^2 provides evidence that 28% of the variation in the response variable, resistance to CRM system is attributed to the model and that 72% must be attributable to other explanatory factors I did not examine in my study.

The coefficients indicate the individual contribution of each predictor to the model and reveal the relationship between the response variable (Y) and each predictor (Field, 2013). A positive sign of a coefficient means a direct relationship between the response variable and a predictor variable, whereas a negative sign of a coefficient indicates an inverse relationship between the response variable and a predictor variable (Salkind, 2010a).

The coefficient of the culture of the organization (X_1) is 0.560 and represents the change in the response variable (Y) for each unit of change in the predictor variable (X_1) if the effects of all other predictors are held constant. The positive sign of the coefficient indicates a positive relationship between (X_1) and (Y). An increase in the extent to which OCTAPACE cultural values are shared within the organization is associated with an

increase of employee's resistance to CRM system increases. This means when OCTAPACE cultural values are shared by all members or present, employee's resistance to CRM system implementation increases.

The coefficient of employee's readiness for CRM system implementation (X_2) was -0.384 and represents the change in the response variable (Y) for each unit of change in the predictor variable (X_2) if the effects of all other predictors are held constant. The negative sign of the coefficient indicates a negative relationship between (X_2) and (Y). An increase in employee's readiness for CRM system implementation is associated with a decrease in employee's resistance to CRM system implementation. This means that when employees are well prepared for CRM system implementation, their resistance to CRM system implementation decreases.

The coefficient of prerequisites of CRM system implementation (X_3) is 0.280 and represents the change in the response variable (Y) for each unit of change in the predictor variable (X_3) if the effects of all other predictors are held constant. The positive sign of the coefficient indicates a negative relationship between (X_3) and (Y). An increase in the level of prerequisites for CRM system implementation is associated with an increase of employee's resistance to CRM system implementation. This means that when employees have a high level of prerequisites for CRM system implementation, their resistance to CRM system implementation increases.

The coefficients of the three age variables X_4, X_5, and X_6 were -1.107, -0.1997, and -1.225 respectively. The age variables reflect comparisons among age groups on the response variable. This means that when $X_4 = 1$ (age group 1, 18 to 29 years old), the

predicted resistance to CRM system implementation is 1.107 units lower than age group 4 (60 years old and older). In other words, the age group between 18 to 29 years has less resistance to CRM system implementation than the ages 60 years old and older. When X_5 = 1 (age group between 30 and 44 years old), the predicted resistance to CRM system implementation is .1997 units lower than age group 4 (60 years old and older). That is, the age group between 30 and 44 years has less resistance to CRM system implementation than the age group 60 years old and older. When X_6 = 1 (age group between 45 and 59 years old), the predicted resistance to CRM system implementation is 1.225 units lower than age group 4 (60 years old and older). The age group between 45 and 59 years has less resistance to CRM system implementation than the age group 60 years old and older.

Since there was evidence that employee's age may be a significant predictor of resistance to CRM system implementation because of the individual t tests and the adjusted R^2 of the model which includes age group, I conducted an ANOVA on age group to more clearly investigate. I conducted an ANOVA to more clearly investigate the influence of age group on resistance to CRM system implementation. Table 82 shows that while there were differences in the mean for resistance to CRM system implementation among age groups, there was not a significance difference among age group means, $p > .10$. F (3, 75) = 1.929.

Table 82

One-Way ANOVA of Age Groups

	df	*F*	Sig.
Between Groups	3	1.929	.132
Within Groups	75		
Total	78		

Table 83 displays how age groups differed from each other. The table shows that there were no significant differences in employee's resistance to CRM system implementation among age groups; *p* values were > .10, though the difference between group 2 and group 1 was nearly significant, $p < .10$ (.086). There was no significant difference among group 1, group 2, group 3, and group 4 regarding resistance to CRM system implementation.

Table 83

Comparisons among Age Groups

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.
Group1	Group2	-.63546	.26506	.086
	Group3	-.45574	.31804	.483
	Group4	-.47143	.60167	.862
Group2	Group1	.63546	.26506	.086
	Group3	.17972	.28444	.921
	Group4	.16404	.58461	.992
Group3	Group1	.45574	.31804	.483
	Group2	-.17972	.28444	.921
	Group4	-.01569	.61046	1.000
Group4	Group1	.47143	.60167	.862
	Group2	-.16404	.58461	.992
	Group3	.01569	.61046	1.000

The coefficient of employee's gender (X_7) was -0.724, which means that female employees had a resistance to CRM system implementation value that was 0.724 lower that for male employees if the effects of all other predictors are held constant. In other words, females are less resistant to CRM system implementation than males.

Analysis of the Final Predictive Model

The analysis of the results in Chapter 4 revealed the culture of the organization (X_1), employee's readiness for CRM system implementation (X_2), and gender (X_7) were significant predictors of employee's resistance to CRM system implementation (Y). The findings of my study support the findings from many previous studies.

The culture of the organization and employee's resistance to CRM system implementation. Based on the literature review, I posited that the culture of the organization may enhance employees' attitudes toward CRM system implementation and thus reduce employee's resistance to organizational change. Specifically, I proposed that OCTAPACE cultural values enhance employees' attitudes toward CRM system implementation and thus reduce their resistance to implementation. My results revealed that the culture of the organization is positively related to employee's resistance to CRM system implementation meaning that employees in the culture of an organization that promotes OCTAPACE cultural values display a high level of resistance to CRM system implementation.

Prior research had indicated that the type of the culture of the organization can facilitate or impede CRM system implementation (Iriana et al., 2013; Rahimi, 2014; Rahimi & Gunlu, 2016). The evidence suggests that the culture of the organization can

have either a positive or a negative effect on employee's resistance to CRM system implementation. My study was consistent with these studies as the results revealed that the presence of OCTAPACE cultural values increases employee's resistance to CRM system implementation, meaning it impedes CRM system implementation. My results demonstrated the negative effect of the culture of the organization on CRM system implementation. This evidence could be indicative of the culture of resistance to organizational change. According to McLean and Antony (2014), the culture of the organization can create employees' resistance to organizational change.

My results were inconsistent with Carlstrom and Ekman (2012) and Johansson et al.'s (2014) findings that the culture of the organization has positive effect on employees' resistance to organizational change. Carlstrom and Ekman reported that a culture of flexibility, cohesion, and trust reduces employees' resistance to organizational change. Rashid et al. (2004) also found that the culture of the organization is positively related to employees' resistance to CRM system implementation. Rashid et al. indicated that employees had positive attitudes toward organizational change in a networked culture of the organization that promotes sociability and organizational growth and development. My results showed that employees resist CRM system implementation because they have a strong commitment to the cultural values and perceive CRM system implementation as a threat to these values. The results were consistent with Neelam et al.'s (2015) findings that OCTAPACE cultural values influence employees' commitment. Parris et al. (2016) indicated that obtaining employees' commitment and motivation are challenges for a successful CRM system implementation. Rahimi and Gunlu (2016) reported that CRM

system implementation requires changes in employees' attitudes, business processes, and the culture of the organization to increase employees' acceptance of CRM system implementation.

Additionally, Rahimi and Gunlu (2016) found that the culture of the organization is positively related to three components of CRM system implementation (people, technology, and process). Similarly, Rahimi (2017) revealed that the culture of the organization that encompasses adaptability, consistency, and employees' involvement has a significant positive impact on CRM system implementation. Rahimi (2014) stated that people component of CRM system implementation includes employees' readiness for CRM system implementation. As explained earlier, employees' readiness for organizational change relates to their resistance to organizational change suggesting that the culture of the organization relates to employee's resistance to CRM system implementation. Contradicting Rahimin and Rahimi and Gunlu's findings, my results revealed that OCTPACE cultural values have a negative effect on employees' resistance to CRM system implementation.

As described in Chapter 2, OCTAPACE cultural values in an organization promote an open culture where employees freely share their opinions, are encouraged to take initiatives, are trusted, and are encouraged to innovate. Latta (2015) called for further investigation into how the culture of the organization facilitates organizational change. The response based on my research would be that employees' commitment and motivation are associated positively with the culture of the organization, but that association can result in resistance to change.

Employee's readiness for CRM system implementation and employee's resistance to CRM system implementation. Based on the literature review, I posited that employee's readiness for CRM system implementation may relate to employees' resistance to CRM system implementation. My results revealed that as an employee's readiness for CRM system implementation increases, the employee's resistance to CRM system implementation decreases. Thakur and Srivastava (2018) found that employees' readiness for organizational change is negatively associated with employees' resistance to organizational change. McKay et al. (2013) reported that employees' resistance to organizational change implementation is negatively related to employees' readiness for organizational change. Vakola (2013) suggested that employees' readiness for organizational change impacts employees' positive attitudes toward organizational change. A high level of employees' readiness for organizational change can result in positive attitudes toward organizational change. In contrast, a low level of employees' readiness for organizational change can lead to employees' resistance to organizational change (Vakola, 2013).

Appelbaum et al. (2015) suggested that a high level of employees' readiness for organizational change can lower employees' resistance to organizational change. In contrast, a lower level of employees' readiness for organizational change can result in a higher level of employees' resistance to organizational change (Appelbaum et al., 2015). My results confirmed the negative association between employee's readiness to CRM system implementation and employee's resistance to CRM system implementation that higher readiness predicts lower resistance. My results were consistent with prior research

as the results revealed a significant and negative relationship between employee's readiness for CRM system implementation and employee's resistance to CRM system implementation.

Prerequisites for CRM system implementation and employee's resistance to CRM system implementation. Based on the literature review, I posited that prerequisites for CRM system implementation relate inversely to employees' resistance to CRM system implementation and are essential for a successful CRM system implementation. For example, Rao (2015) found a negative relationship between prerequisites for CRM system implementation and employees' resistance to CRM system implementation. Rao's results suggested that a lack of prerequisites for CRM system implementation can lead to employees' resistance to CRM system implementation. In other words, when employees have sufficient knowledge of CRM system implementation they are less likely to resist CRM system implementation. In contrast, if employees lack the essential skills and knowledge of CRM system implementation they tend to resist its implementation. Shafique et al. (2015) and Wang and Feng (2012) suggested that prerequisites for CRM system implementation are essential for a successful CRM system implementation.

My results refuted the research by Rao (2015), Shafique et al. (2015), and Wang and Feng (2012). My results indicated that prerequisites for CRM system implementation were positively related to employees' resistance to CRM system implementation. This means that a high level of prerequisites for CRM system implementation is associated with a high level of employee's resistance to CRM system implementation, contrary to

prior research. In contrast to prior research, my results revealed that a strong presence of prerequisites for CRM system implementation have a negative effect on a successful implementation as it associated with a high level of employees' resistance to its implementation.

The explanation for the contradiction with these studies is that employees' reactions to change vary because of individual disposition. Individual disposition resistance involves inclination to maintain the status quo (Oreg, 2006). Prior research indicated that employees resist organizational change because it causes anxiety and discomfort (see, for example, Ujhelyi et al., 2015). This may be the reason that employees with a high level of prerequisites for CRM system implementation display a high level of resistance to CRM system implementation; implementation causes stress and discomfort.

Employee's gender and employee's resistance to CRM system implementation. Based on the literature, I posited that employee's age and employee's gender influence employee's resistance to CRM system implementation. My results were contradicted with Pakdel's (2016) findings. Pakdel found that employees' age and gender have no significant impact on employees' resistance to organizational change. My study demonstrated a difference between men and females regarding resistance to organizational change. My research revealed that male employees are more resistant to CRM system implementation than female employees.

Additionally, my results showed that employee's age may have influential effect on employee's resistance to CRM system implementation. My results were consistent

with Merdzanovska's (2016) findings that employees' age and gender influence their acceptance of organizational change.

My results were also inconsistent with Cropley and Cropley's (2017) results. Cropley and Cropley found that there is no difference between female and male employees regarding innovation capability. Additionally, Davis and Songer (2009) found that female employees are more resistant to IT implementation compared to male employees. My results indicated that gender is negatively related to employees' resistance to CRM system implementation; that female employees are less resistant to CRM system implementation than males.

Interpretation of Results in Relation to the Theoretical Framework

I used Rogers's (2003) innovation-decision process theory as a theoretical framework. I selected this theory because it relates to CRM system implementation and employees' attitudes toward CRM system implementation. Numerous researchers have used the theory to investigate CRM system implementation. I applied three aspects of Rogers's innovation-decision process theory: attributes of an innovation that influence its adoption rate, the norms of a social system, and adopter's categories. Rogers (2003) assumed that the norms of a social system are crucial conditions for pre-adoption and adoption of an innovation. Rogers also classified adopters of an innovation into five categories: innovators, early adopter, early majority, late majority, and laggards based on their attitudes toward innovation.

Specifically, I used three attributes of an innovation that influence adoption rate of an innovation: relative advantage, compatibility, and complexity. I defined relative

advantage as employees' readiness for CRM system implementation, compatibility as prerequisites for CRM system implementation, complexity as employees' resistance to CRM system implementation. I also defined the norms of the social system as the culture of the organization. Additionally, I considered how adopter's categories align with employees' age groups. I proposed that these factors affect CRM system implementation and interplay. My results revealed a relationship among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, and age.

The results were indicative of a relationship among relative advantage, compatibility, the norms of the social system, adopter's categories and complexity. Specifically, the results demonstrated that as relative advantage increases, complexity decreases as the results revealed a negative significant relationship between employee's resistance to CRM system implementation and employee's readiness for CRM system implementation. In addition, the norms of the social system were associated with complexity because the results showed that the culture of the organization was positively related to employee's resistance to CRM system implementation. Compatibility and the five categories, however, were not significantly related to complexity as prerequisites for CRM system implementation and age were not significant predictors of employee's resistance to CRM system implementation.

Although previous researchers may have used the innovation-decision process to study CRM system implementation, they may not have applied these aspects of the theory as organizational factors that affect CRM system implementation. My results were

inconsistent with Lee et al.'s (2015) suggestion that a high degree of compatibility leads to acceptance of a CRM system implementation as prerequisites for CRM system implementation was not a significant predictor of employee's resistance to CRM system implementation. Additionally, Wang et al. (2016) indicated that employees are more likely to implement CRM systems if they have the essential prerequisites for CRM system implementation, however, my results revealed that prerequisites for CRM system implementation were not significantly related to employee's resistance to CRM system implementation but may be significant with a greater sample size. My results revealed that a strong presence of prerequisites for CRM system implementation increases employees' resistance to CRM system implementation, meaning that prerequisites for CRM system implementation hinder CRM system implementation. As described earlier, my results also refuted Shafique et al.'s (2015) findings that a high level of prerequisites for CRM system implementation is associated with employees' positive attitudes toward CRM system implementation.

Additionally, my results refuted Rao's (2015) suggestion that a lack of prerequisites for CRM system implementation can result in employees' resistance to CRM system implementation. Similarly, the results of my study support association between adopters' categories and the complexity of an innovation because age was nearly a significant predictor of employee's resistance to CRM system implementation and may be a significant predictor with a larger sample size.

Overall, the findings of my study support the application of Rogers's (2003) model to CRM system implementation. The key contribution to Rogers's theory was

considering different elements of the theory as organizational factors that affect CRM system implementation. The second contribution was examining the interrelationships among these elements.

How the Findings Extend Knowledge in the Discipline

Many organizational factors affect CRM system implementation. As stated in the literature review, prior researchers have investigated multiple organizational factors that affect CRM system implementation either separately or examined the relationship between two of these factors. Prior researchers also have indicated that the interaction between employees' engagement, business processes, and technology affect the benefits of CRM system implementation (Iriana et al., 2013). Researchers, however, may have not investigated the interrelationships among the factors that facilitate or impede CRM system implementation, specifically in the telecommunications industry.

Although researchers have examined readiness for organizational change, they have not addressed the antecedents to employees' readiness for organizational change in current models for organizational change implementation (Caldwell, 2013). Moreover, despite previous research into the culture of the organization, researchers have not examined the role of the culture of the organization on a successful CRM system implementation (Abdulwahab & Ali, 2013). Additionally, researchers have not addressed how the culture of the organization facilitates organizational change (Latta, 2015). I examined three organizational factors that affect CRM system implementation and are considered as antecedent to employees' resistance to CRM system implementation process (Croasdell et al., 2013; Straatmann et al., 2016).

I responded to the need for further investigation in areas that previous researchers have paid infrequent attention. Although prior researchers have provided several models for CRM system implementation, they have not investigated the relationship among the factors that facilitate or impede its implementation (Ali et al., 2016; Croasdell et al., 2013). This is the first study to examine the interplay among a set of organizational factors that facilitate or impede CRM system implementation. Specifically, I examined the interrelationships among the culture of the organization, employee's readiness and prerequisites for CRM system implementation, employees' age, gender, and employee's resistance to CRM system implementation.

I added important empirical data to the literature on organizational change in general and in particular, to the literature on CRM system implementation. I provided empirical data regarding the interrelationships among the factors that affect CRM system implementation in the telecommunications industry. The results of this study provide useful information about the effect of the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, and gender on employee's resistance to CRM system implementation process. The findings support the use of innovation-decision process theory in the field of CRM system implementation. My results provided useful information for telecommunications organizations planning CRM system implementation initiatives. Managers might need to recognize the interrelationships among employees' resistance to CRM system implementation, the culture of the organization, employee's readiness for

CRM system implementation, prerequisites for CRM system implementation, age, and gender.

Limitations of the Study

This study involved some limitations. The key limitations were related to the research methodology. First, I employed a quantitative cross-sectional design to collect data from the participants at a single point in time, which did not provide an opportunity to see changes in employee's resistance to CRM system implementation over time. Second, I used an online, self-administered survey that may have involved some biases because of using instruments (Allen, 2017) that prevent making accurate inferences (Frankfort-Nachmias et al., 2015). The use of the instruments generates measurement errors in the response variable (Berry, 1993). Another bias could arise from participants' insincere responses to the survey. I also used MLR which enabled me to confirm a relationship among the response variable and the predictor variables, but not to ascertain the underlying causal mechanism (Frankfort-Nachmias et al., 2015).

Additionally, I studied customer service employees but did not examine top management and mid-level managers' perspectives. I also used age categories instead of actual age, which limited the power of detecting a significant relationship between age and employee's resistance to CRM system implementation. Finally, the sample size was not larger and only limited to employees working in the U.S. telecommunications industry. My results may be generalizable to the U.S. telecommunications industry. Given the nature of the sample, generalizability of the results to other industries might not be reasonable.

Limitations to Validity and Reliability

As discussed in Chapter 3, I used a shortened version of each instrument to suit the purpose of the study and adhere to the SurveyMonkey requirements regarding the total number of questions in the survey. The results showed that RTC scale, OCRBS, and CRM system capabilities scale demonstrated excellent reliability indicating consistency in the responses throughout the survey questions. As discussed in Chapter 4, heteroscedasticity is expected in cross-sectional designs and when the unit of analysis is individuals. The analyses of the assumptions of normality, homoscedasticity, and absence of multicollinearity indicated that all were met suggesting accuracy of the empirical validity.

The low level of Cronbach's alpha of some items of the OCTAPACE culture profile scale and heteroscedasticity of prerequisites for CRM system implementation represented a potential concerns that did not impact the reliability and validity of this study as some constructs show low levels of reliability (Field, 2013) and heterogeneity is expected in cross-sectional study (Berry, 1993; Berry & Feldman, 1985).

Recommendations

The findings of my study have significant implications for scholars, practitioners, and managers. The findings also contribute to the literature on CRM system implementation and the use of CRM system in the telecommunications industry.

The purpose of this study was to examine the factors that facilitate CRM system implementation. Specifically, the purpose of this study was to examine whether a relationship exists among employee's resistance to CRM system implementation, the

culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender. The results of the study indicated a significant relationship between employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, and gender.

The limitations of this study provide opportunities for future research. Future researchers can focus on specific aspects of the findings of the study to expand the current knowledge of the factors affecting CRM system implementation. Future researchers may validate my results by conducting longitudinal studies to investigate development of employee's resistance to CRM system implementation over time and establish cause-and-effect relationship among the study variables for better validity. I would also recommend further research on other organizational factors that I have not examined in my study to obtain more insightful findings. I would recommend further studies focusing on mid-level managers because they are in close contact with frontline employees such as customer service employees to obtain results from diverse groups.

I would also recommend further studies using qualitative approaches to understand employees' perspectives and experiences regarding the factors affecting CRM system implementation. In addition, researchers may investigate the effect of employees' age on CRM system implementation considering age as a continuous numerical variable rather than a categorical variable. Given that the sample size was not large, future studies involving larger samples of participants might detect statistically significant effects for the predictor variables, prerequisites for CRM system implementation and age. The

findings indicated 72% of the variation in employee's resistance to CRM system implementation came from other factors. Researchers should investigate other factors that influence CRM system implementation.

Implications

Based on the results of the study, I would recommend the following for practitioners, managers, and leaders. First, leaders and managers in the telecommunications industry may need to take into account the interrelationships among the factors that facilitate or impede CRM system implementation. Specifically, managers should consider employee's readiness for CRM system implementation to reduce employee's resistance to its implementation and ensure a successful CRM system implementation. Managers can use different strategies to establish employee's readiness for CRM system implementation such as providing support and maintaining effective communication with employees during all stages of CRM system implementation. Managers can also provide training to assist employees in developing efficacy and valence to enhance their readiness for CRM system implementation. Managers should communicate to the employees the benefits of CRM system implementation and demonstrate procedures of CRM system implementation. Effective communication with employees leads to a high level of employees' readiness for CRM system implementation (Vakola, 2014). These strategies can help employees in using a CRM system successfully.

Second, leaders and managers should consider the type of the culture of the organization to foster positive attitudes toward CRM system implementation. The culture

of the organization is critical to CRM system implementation because it influences both employee's readiness for CRM system and employee's resistance to CRM system implementation. Managers should increase employees' readiness for CRM system implementation to mitigate the negative effect of the culture of the organization on employees' resistance to CRM system implementation. The type of the culture of the organization can facilitate or impede CRM system implementation. Numerous researchers have indicated that the culture of the organization can facilitate and impede CRM system implementation (see, for example, Iriana et al., 2013; Latta, 2015; Parris et al., 2016; Rahimi & Gunlu, 2016). Managers should consider OCTAPACE cultural values to promote open culture, mutual trust, collaboration, and innovation. Building an open, honest, and transparent culture of an organization is crucial for a successful CRM system implementation (Triznova et al., 2015). Managers should motivate employees in a culture of an organization that promotes OCTAPACE cultural values to reduce employees' resistance to CRM system implementation.

Third, managers should take into account prerequisites for CRM system implementation; specifically customer interaction management capability and customer management upgrading capability to improve employees' knowledge of these prerequisites because they affect employee's resistance to CRM system implementation. At the same time, managers should consider employees' personality and dispositional resistance to overcome stress and discomfort associated with CRM system implementation and, in turn, to reduce their resistance to CRM system implementation.

Fourth, managers should pay attention to employees' gender to assist resistant employees and overcome their resistance to CRM system implementation.

The current literature on CRM system implementation showed that managers spend substantial amount of money to implement CRM systems (Iriana et al., 2013). At the same time, managers encounter a high failure rate of CRM system implementation (Lizar et al., 2015). The findings of my study have significant implications for business managers and leaders in the telecommunications industry.

Implications for Practice

The findings may be significant to managers in the telecommunications industry since it provide a predictive model for CRM system implementation. Using a model for CRM system implementation, managers could implement CRM systems successfully. Managers can use the model to establish readiness for CRM system implementation, supportive culture of the organization, and improve prerequisites for CRM system implementation. Managers in the telecommunications industry can further investigate the relationship reported in this study to reconsider their existing strategies for CRM system implementation and may need to revise those strategies.

Understanding that the culture of the organization, employee's readiness for CRM system implementation can minimize employee's resistance to CRM system implementation may help managers in implementing a CRM system successfully. Managers may consider employees' gender before initiating CRM system implementation to help employees who resists CRM system implementation.

Implication for Theory

Uniquely, I applied different elements of Rogers's (2003) innovation-decision process theory to investigate CRM system implementation. Rogers theorized five attributes of an innovation influence adoption rate of an innovation at the persuasion stage. Rogers also proposed the norms of a social system as a precondition to the adoption of an innovation. Additionally, Rogers suggested five categories of adopters within a social system. Application of Rogers's theory in the analyses of the results revealed the significance of three attributes of an innovation and the norms of a social system, adopter's categories to CRM system implementation.

More specifically, my results revealed that relative advantage and the norms of the social system correlated with complexity. My study provides additional insight into Rogers's model for innovation-decision process through viewing these elements as organizational factors that facilitate CRM system implementation.

Implication for Positive Social Change

As stated previously, managers lack a comprehensive model for CRM system implementation that includes the factors that influence CRM system implementation (Laura & Mantas, 2013; Parris, Bouchet, Welty Peachey, & Arnold, 2016). The potential contributions of my study to the positive social change could be providing managers a better understanding of the interrelationships among the factors that facilitate or impede CRM system implementation. Subsequently, managers might be able to enhance employees' positive attitudes toward CRM implementation, improve their performance, implement CRM systems successfully, and realize the potential benefits of CRM system

implementation. As a result, managers may create benefits for employees, their organizations, and in turn, to the community. Eventually, managers could minimize the high failure rate associated with CRM system implementation.

Conclusions

In the 21st century, leaders and managers are facing many challenges because of a highly competitive business environment and an increase in customer demands of a high quality service (Parris et al., 2016). Leaders and managers implement a CRM system to enhance competitive advantage and provide high quality services and product. Researchers have provided various definitions of a CRM system (Brambilla & Dalmarco, 2014; Croasdell et al., 2013). Researchers have defined a CRM system as a comprehensive management strategy that managers apply to enhance customer satisfaction and enhance business competitiveness and profitability (Parris et al., 2016; Peltier et al., 2013).

Researchers also have reported numerous benefits of CRM system implementation and indicated that the ultimate goal of CRM system implementation is to obtain retain customer; obtain customer satisfaction and loyalty customers; enhance competitiveness; and increase profitability (Debnath et al., 2016; Marko et al., 2015; Toma, 2016). Despite the importance and the benefits of CRM system implementation, managers across many industries are unable to obtain these benefits (Cheng & Yang, 2013). Researchers have suggested that although managers in the telecommunications industry invest considerably in CRM system they face a high failure rate of CRM system implementation (Mohammed & Mohammad, 2015). The literature showed that

employees' resistance to CRM system implementation is the main obstacle to a successful CRM system implementation (Croasdell et al., 2013; Frygell et al., 2017). As a result, managers are unable to capture the benefits of CRM system implementation.

In order to achieve the desired benefits of CRM system implementation, managers need to balance among four elements: the culture of the organization, employees, business process, and technology (Rigo et al., 2016). The goal of my study was to examine the relationship among the factors that facilitate or impede CRM system implementation. The research question was focused on the relationship among employee's resistance to CRM system implementation, the culture of the organization, employee's readiness for CRM system implementation, prerequisites for CRM system implementation, age, and gender. My study showed that employee's resistance to CRM system implementation is predicted based on the culture of the organization, employee's readiness for CRM system implementation, and gender.

Enhancing employees' attitudes toward CRM system implementation can positively affect employees' morale, performance, and in turn, a successful CRM system implementation. Understanding the interrelationships among the factors that affect CRM system implementation not only saves time, money, and efforts but also to not questioning managers' ability to affect organizational change successfully. A comprehensive model for CRM system implementation that addresses the factors that facilitate or impede its implementation could help managers in improving employees' attitudes and minimize the high failure rate associated with CRM system implementation.

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Appendix A: G*Power Analysis

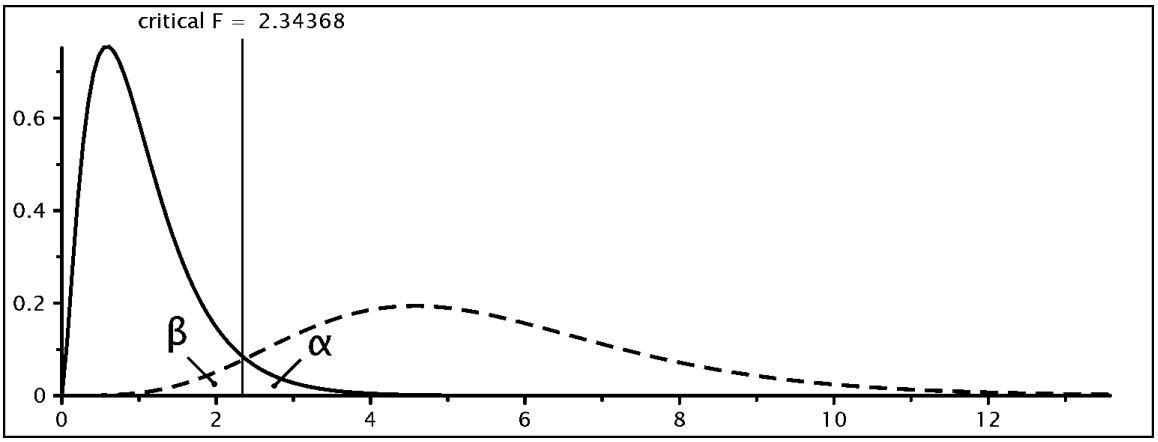

Figure A1. Power as a function of sample size.

Appendix B: Survey Questionnaire Instruments

Please indicate your age group

18 – 29 years

30 – 44 years

45 – 59 year

60 – and older

Please indicate your gender

Female Male

Resistance to customer relationship management system

Instructions: please place a check mark in the column that most represents your agreement with the following statements:

	1	2	3	4	5	6	7
I was afraid of CRM systems implementation							
I had a bad feeling about CRM system implementation							
I was quite excited about CRM system implementation *							
The CRM system implementation made me upset							
I was stressed by CRM system implementation							

I looked for ways to prevent CRM system implementation from taking place							
I protested against CRM system implementation							
I complained about the CRM system implementation to my colleagues							
I presented my objections regarding CRM system implementation to management							
I spoke rather highly of CRM system implementation to others*							

Note: 1 = strongly agree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree or disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree.

The culture of the organization -OCTAPACE profile survey

Please place a check mark (✓) 4 if the statement is a Very Widely Shared Belief.

Check 3 If the statement is Fairly Widely Shared. Check 2 If Only Some Persons in the

Organization Share this Belief. Check 1 If Only a Few or None Have this Belief

	The Items	4	3	2	1
1*	An actual shared belief at the company is: Effective managers put a lid on their feelings.				
2*	An actual shared belief at the company is: Pass the buck tactfully whenever there is a problem				
3	An actual shared belief at the company is: Trust begets trust				
4*	An actual shared belief at the company is: Telling a polite lie is preferable to telling an unpleasant truth				

5 An actual shared belief at the company is: Prevention is better than cure

6* An actual shared belief at the company is: Freedom to employees breeds indiscipline

7* An actual shared belief at the company is: Usually, emphasis on teamwork dilutes individual accountability

8 An actual shared belief at the company is: Thinking out and doing new things tones up the organization's vitality

9 An actual shared belief at the company is: Free and frank communication between various levels helps in solving problems

10 An actual shared belief at the company is: Surfacing problems is not enough; we should find the solutions.

11* An actual shared belief at the company is: When the chips are down you have to fend for yourself (people cannot rely on others in times of crisis)

12 An actual shared belief at the company is: People generally are what they appear to be

13 An actual shared belief at the company is: A stitch in time saves nine.

14 An actual shared belief at the company is: A good way to motivate employees is to give them autonomy to plan their work

15 An actual shared belief at the company is: Employees' involvement in developing an organization's mission and goals contributes to productivity.

16* An actual shared belief at the company is: In today's competitive situations, consolidation and stability are more important than experimentation

Employees Readiness for (CRM) system Implementation-OCRBS scale

For each statement, please place a check mark in the column that most represents your response.

	1	2	3	4	5	6	7
I have the capability to implement CRM system that is initiated							
I can implement CRM system in my job							
I am capable of successfully							

performing my job duties with the implementation CRM system							
I believe we can successfully implement CRM system							
We have the capability to successfully implement CRM system							
Most of my respected peers embrace the implementation of CRM system							
The top leaders in this organization are “walking the talk”							
The top leaders support implementation of CRM system							
The majority of my respected peers are dedicated to making the implementation of CRM systems work							
My immediate manager is in favor of implementation of customer relationship management							

system							
My immediate manager encourages me to support the implementation of customer relationship management system							
The implementation of customer relationship management systems will benefit me							
With implementation of customer relationship management systems in my job, I will experience more self-fulfillment							
I will earn higher pay from my job after implementation of customer relationship management system							
The change in my job assignments will increase my feelings of accomplishment							

Note: 1 = strongly agree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree or disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree.

Customer relationship management (CRM) capabilities scale

For each statement, please place a check mark in the column that most represents your response.

	1	2	3	4	5
We regularly meet customers to learn their current and potential needs for new products					
We are good at creating relationships with key customers					
We maintain an interactive two-way communication with our customers					
We have a continual dialogue with each customer and use well-developed methods to improve our relationships					
We are good at maintaining relationship with key customers					
Customer Relationship Upgrading Capability					
We measure					

customer satisfaction systematically and frequently					
We have formalized procedures for up-selling to valuable customers					
We have formalized procedures for cross-selling to valuable customers					
We try to systematically extend our "share of customers" with high-value customers					

Note: 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, 5 = strongly agree.

Appendix C: Permission Letters

Resistance to change (RTC) scale: according to Copyright Clearance, (*n. d.*), " Taylor & Francis is pleased to offer reuses of its content for a thesis or dissertation free of charge contingent on resubmission of permission request if work is published."

To: hep_customer-service@mheducation.com

Subject: Permission to use the OCTAPACE (Openness, Confrontation, Trust, Authenticity, Pro-action, Autonomy, Collaboration, and Experimentation (OCTAPACE) Profile Questionnaire Copyright Licensing Agency

Dear Sir/Madam,

My name is Enshrah Shashoug. I am a doctoral candidate in the School of Management and Technology at Walden University working on my proposal. My purpose for writing is to request permission to use the OCTAPACE Profile Questionnaire as a research instrument in my proposed research study. The study is tentatively titled "Factors Affecting Customer Relationship Management Implementation Process: A Multiple Regression Analysis. The purpose of my proposed study is to examine whether a relationship exists between employees' resistance to customer relationship management implementation, employees' readiness for customer relationship management implementation, the culture of the organization, and prerequisites for customer relationship management implementation. Book reference: *Training instruments for human resource development* by Pareek, U. (1997). New Delhi: Tata McGraw-Hill Publishing Company. Pareek (1997) provided a profile of the ethos of the culture of the organization that can be used for assessing eight values that I am investigating for my dissertation. Please let me know if you would permit the use of your scale the OCTAPACE Profile Questionnaire.

Sincerely,

Enshrah Shashoug
Email:
Walden University

Dear Mr. Shashoug,

Greetings from McGraw Hill!

This is further to your below request, we would like to inform that we have declared title request by you as out of print and rights have been reverted back to author.

Regards,
Saurabh

To: emerald@emeraldinsight.com

Subject: Permission to use Customer Relationship Management Capabilities Scale Copyright Licensing Agency

Dear Sir/Madam,

My name is Enshrah Shashoug. I am a doctoral candidate in the School of Management and Technology at Walden University working on my proposal. The study is tentatively titled "Factors Affecting Customer Relationship Management Implementation Process: A Multiple Regression Analysis". The purpose of my study is to examine whether a relationship exists between employees' resistance to customer relationship management implementation, employees' readiness for customer relationship management implementation, the culture of the organization, and prerequisites for customer relationship management implementation. My purpose for writing is to request permission to use Customer Relationship Management Capabilities Scale instrument in my research study. Article reference: Customer relationship management capabilities: Measurement, antecedents and consequences by Wang, Y., & Feng, H. (2012). *Management Decision*, *50* (1-2), 115-129.doi: 10.1108/00251741211194903. Wang and Feng (2012) identified the capabilities for customer relationship management system implementation which are customer interaction management, customer relationship upgrading, and customer win back capability that I am investigating in my dissertation. Please let me know if you would permit the use of your Scale Customer Relationship Capabilities Scale.

Sincerely,

Enshrah Shashoug

Walden University

Dear Enshrah Shashoug,

Please allow me to introduce myself, my name is Lauren Flintoft and I am the Rights Executive here at Emerald.

Subject to full referencing, Emerald is happy for you to use this content within your thesis. Please note, however, that if in the future you wish to publish your thesis commercially, you will need to clear permission again.

Please note, the above grants permission for content that is '© Emerald Publishing' only. Any content used from the article that makes reference to a copyright holder other than Emerald, will require you to clear permission with that party directly.

I hope this helps, please do not hesitate to contact me should you require any further assistance.

Kind Regards,

Lauren Flintoft
Rights Executive| Emerald Group
T: +44 (0) 1274 785227
LFlintoft@emeraldgroup.com| www.emeraldinsight.com

To: permissions@sagepub.com
Subject: Permission to use The Organizational Change Recipients' Beliefs Scale (OCRBS)

Dear Sir/Madam,
My name is Enshrah Shashoug. I am a doctoral candidate in the School of Management and Technology at Walden University working on my proposal. The study is tentatively titled "Factors Affect Customer Relationship Management Implementation Process: A Multiple Regression Analysis". The purpose of my proposed study is to examine whether a relationship exists between employees' resistance to customer relationship management implementation, employees' readiness for customer relationship management implementation, the culture of the organization, and prerequisites for customer relationship management implementation. My purpose in writing is to request permission to use The Organizational Change Recipients' Beliefs Scale (OCRBS) for my dissertation study. Article reference: Article reference: The Organizational Change Recipients' Belief Scale: Development of an Assessment Instrument by Armenakis, Achilles A.; Bernerth, Jeremy B.; Pitts, Jennifer P.; Walker, H. Jack. (2007). *Journal of Applied Behavioral Science*, Vol. 43 Issue 4; doi: 10.1177/0021886307303654. Armenakis et al., (2007) identified key factors for assessing employees' readiness for organizational change that I am investigating in my dissertation. Minor adaptation will be needed for a survey of Customer Relationship management implementation. Accordingly, the word "change" will be replaced by the phrase "Customer Relationship management implementation" Please let me know if you would permit the use of your Scale Organizational Change Recipients' Beliefs Scale (OCRBS).

Sincerely,

Enshrah Shashoug

Email:
Walden University

Hello Enshrah,

Thank you for your request and apologies for the delay. I am happy to report that you can consider this email as permission to use the Organizational Change Recipients' Beliefs Scale (OCRBS)as detailed below in your upcoming dissertation research. Please note that this permission does not cover any 3rd party material that may or may not be found within the work. Distribution of the OCRBS must be controlled, meaning only to the participants engaged in the research or enrolled in the educational activity. All copies of the material should be collected and destroyed once all data collection and research on this project is complete. Any other type of reproduction or distribution of scale content is not authorized without written permission from the publisher.

You must properly credit the original source, SAGE Publications, Inc. If you wish to include the scale/tool/questionnaire itself in your final dissertation report, please contact us again for that request

Please contact us for any further usage of the material and good luck on your dissertation!

All the Best,
Yvonne
--
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Appendix D: Scree Plots of Scales

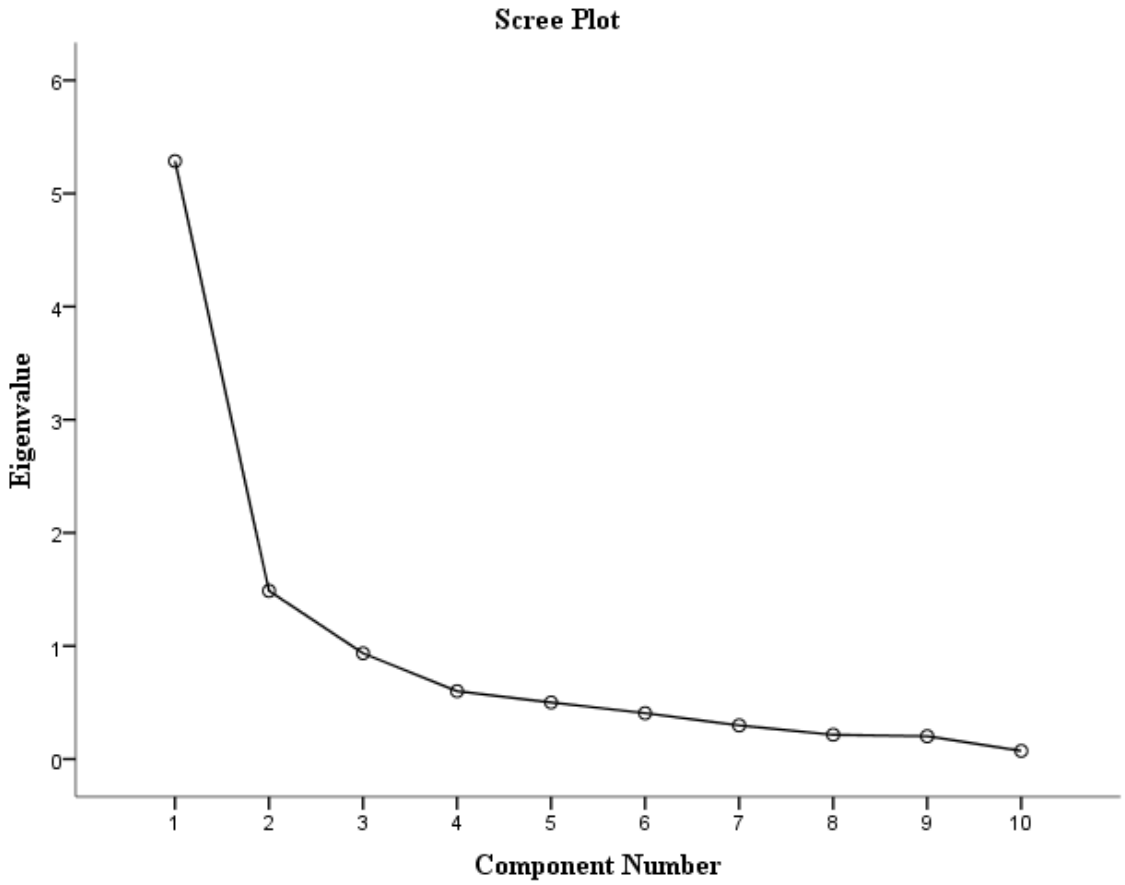

Figure D1. Scree plot for RTC scale.

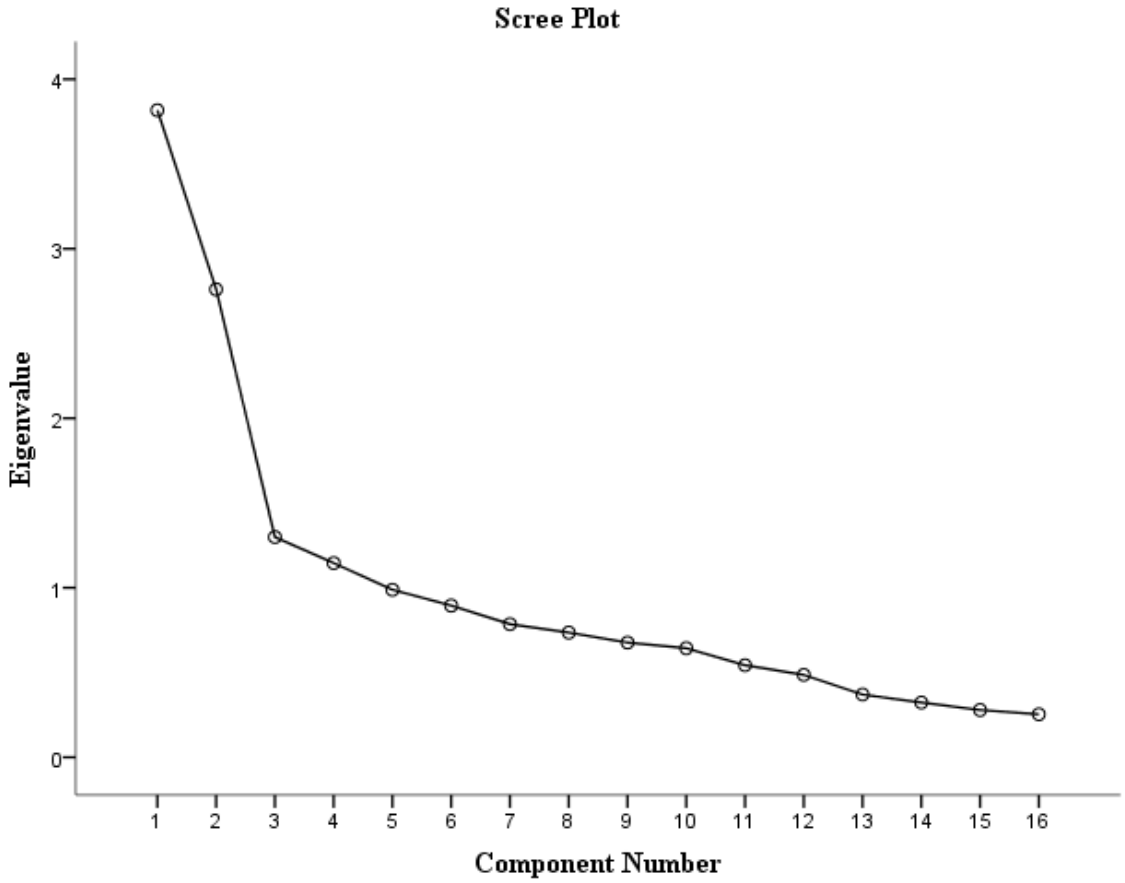

Figure D2. Scree plot for OCTAPACE profile scale.

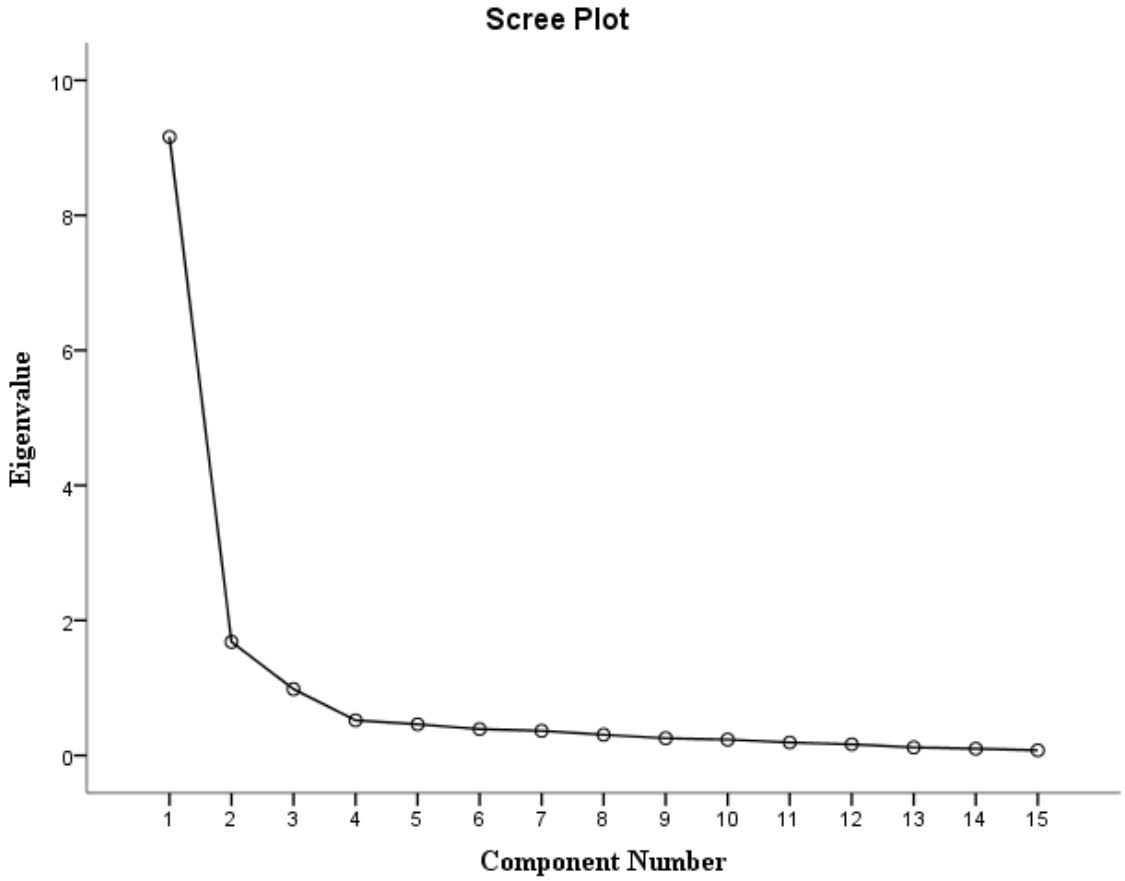

Figure D3. Scree plot for OCRBS scale.

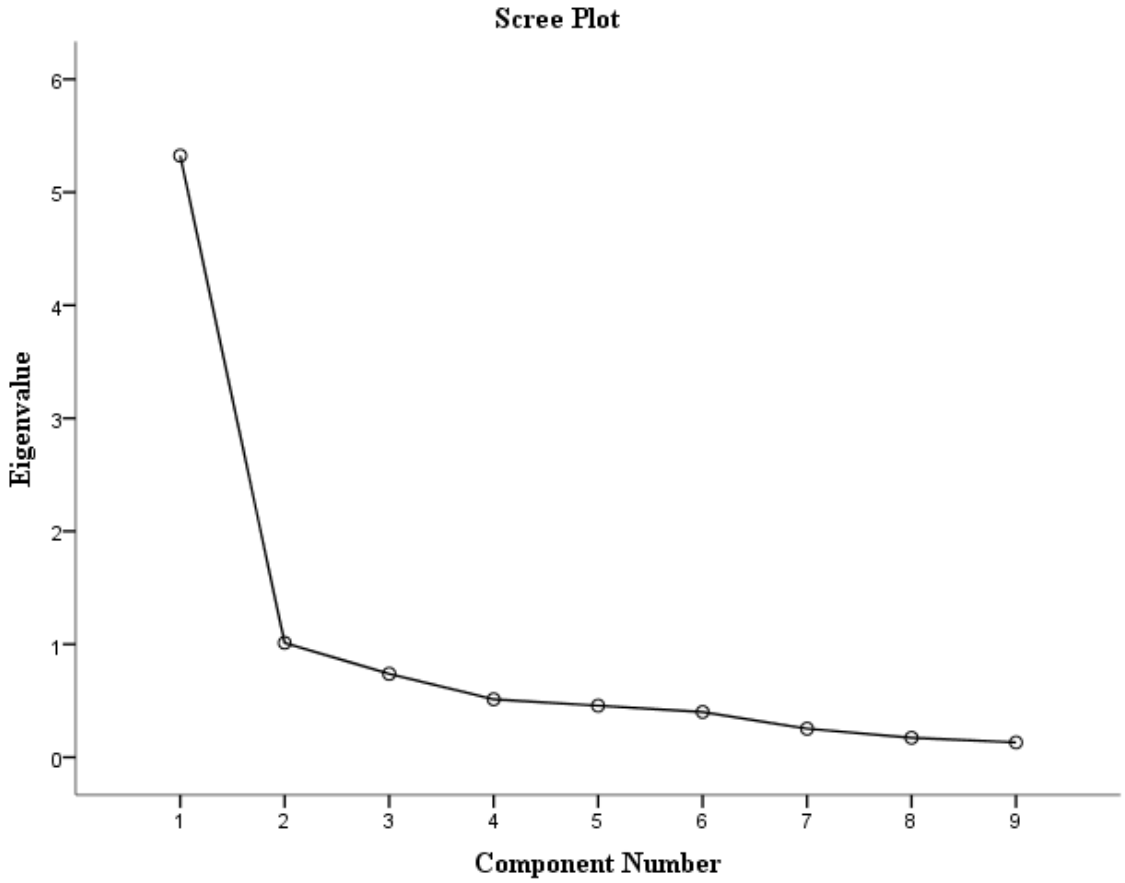

Figure D4. Scree plot for CRM capabilities scale.

Appendix E: Results of Levene's Test of Equality of Error

Table E1

Results of Levene's Test for All Predictor Variables

Variable	*F*	*df*1	*df*2	Sig.
X_1	1.507	20	58	.114
X_2	.686	66	12	.837
X_3	9.934	47	31	.000
X_4	.080	1	77	.778
X_5	.174	1	77	.678
X_6	.158	1	77	.693
X_7	.560	1	77	.457

Appendix F: Results of Best-Subsets Regression

Table F1

Results of Best-Subsets Regression with All Predictor Variables

Model	*Cp*	k+1	R Square	Adj. R Square	Std. Error
X_1	*26.4588*	2	0.0637	0.0515	0.9662
X_2	*14.2779*	2	0.1761	0.1654	0.9063
X_3	*28.1347*	2	0.0482	0.0358	0.9741
X_4	*32.5567*	2	0.0074	-0.0055	0.9948
X_5	*32.2595*	2	0.0101	-0.0027	0.9934
X_6	*31.7279*	2	0.0150	0.0022	0.9910
X_7	*23.0262*	2	0.0953	0.0836	0.9497
$X_1\ X_2$	*12.3314*	3	0.2125	0.1918	0.8919
$X_1\ X_3$	*25.0450*	3	0.0952	0.0713	0.9560
$X_1\ X_4$	*27.8082*	3	0.0697	0.0452	0.9694
$X_1\ X_5$	*27.5492*	3	0.0720	0.0476	0.9682
X_1X_6	*27.3418*	3	0.0740	0.0496	0.9672
$X_1\ X_7$	*16.6901*	3	0.1723	0.1505	0.9144
$X_2\ X_3$	*15.2107*	3	0.1859	0.1645	0.9068
$X_2\ X_4$	*15.6053*	3	0.1823	0.1608	0.9088
$X_2\ X_5$	*15.1520*	3	0.1865	0.1650	0.9065
$X_2\ X_6$	*15.0124*	3	0.1877	0.1664	0.9058
$X_2\ X_7$	*10.0986*	3	0.2331	0.2129	0.8801
$X_3\ X_4$	*29.6021*	3	0.0531	0.0282	0.9780
$X_3\ X_5$	*28.4522*	3	0.0637	0.0391	0.9725
$X_3\ X_6$	*28.0504*	3	0.0674	0.0429	0.9706
$X_3\ X_7$	*21.5550*	3	0.1274	0.1044	0.9389
$X_4\ X_5$	*34.1250*	3	0.0114	-0.0147	0.9993
$X_4\ X_6$	*31.8037*	3	0.0328	0.0073	0.9884
$X_4\ X_7$	*24.8798*	3	0.0967	0.0729	0.9552
$X_5\ X_6$	*33.5154*	3	0.0170	-0.0089	0.9965
$X_5\ X_7$	*24.4714*	3	0.1005	0.0768	0.9532
$X_6\ X_7$	*22.4304*	3	0.1193	0.0961	0.9432
$X_1\ X_2\ X_3$	*12.7893*	4	0.2267	0.1958	0.8897
$X_1\ X_2\ X_4$	*13.7562*	4	0.2178	0.1865	0.8948
$X_1\ X_2\ X_5$	*13.3535*	4	0.2215	0.1904	0.8927
$X_1\ X_2\ X_6$	*13.3943*	4	0.2211	0.1900	0.8929

$X_1\ X_2\ X_7$	*6.9536*	4	0.2806	0.2518	0.8581
$X_1\ X_3\ X_4$	*26.5789*	4	0.0995	0.0634	0.9601
$X_1\ X_3\ X_5$	*25.6692*	4	0.1079	0.0722	0.9556
$X_1\ X_3\ X_6$	*25.5434*	4	0.1090	0.0734	0.9550
$X_1\ X_3\ X_7$	*16.9033*	4	0.1888	0.1563	0.9113
$X_1\ X_4\ X_5$	*29.4435*	4	0.0730	0.0359	0.9741
$X_1\ X_4\ X_6$	*27.8398*	4	0.0878	0.0513	0.9663
$X_1\ X_4\ X_7$	*18.6288*	4	0.1728	0.1397	0.9202
$X_1\ X_5\ X_6$	*29.1085*	4	0.0761	0.0392	0.9725
$X_1\ X_5\ X_7$	*18.3061*	4	0.1758	0.1428	0.9185
$X_1\ X_6\ X_7$	*16.7539*	4	0.1901	0.1577	0.9105
$X_2\ X_3\ X_4$	*16.3813*	4	0.1936	0.1613	0.9085
$X_2\ X_3\ X_5$	*16.3614*	4	0.1938	0.1615	0.9084
$X_2\ X_3\ X_6$	*16.2182*	4	0.1951	0.1629	0.9077
$X_2\ X_3\ X_7$	*10.9199*	4	0.2440	0.2137	0.8797
$X_2\ X_4\ X_5$	*17.0805*	4	0.1871	0.1546	0.9122
$X_2\ X_4\ X_6$	*15.4294*	4	0.2024	0.1705	0.9036
$X_2\ X_4\ X_7$	*11.9159*	4	0.2348	0.2042	0.8850
$X_2\ X_5\ X_6$	*16.6917*	4	0.1907	0.1583	0.9102
$X_2\ X_5\ X_7$	*11.4205*	4	0.2394	0.2089	0.8824
$X_2\ X_6\ X_7$	*10.1225*	4	0.2513	0.2214	0.8754
$X_3\ X_4\ X_5$	*30.4516*	4	0.0637	0.0263	0.9790
$X_3\ X_4\ X_6$	*28.4515*	4	0.0822	0.0455	0.9693
$X_3\ X_4\ X_7$	*23.4730*	4	0.1281	0.0932	0.9447
$X_3\ X_5\ X_6$	*29.6195*	4	0.0714	0.0343	0.9749
$X_3\ X_5\ X_7$	*22.5999*	4	0.1362	0.1016	0.9403
$X_3\ X_6\ X_7$	*20.5842*	4	0.1548	0.1210	0.9301
$X_4\ X_5\ X_6$	*30.5544*	4	0.0628	0.0253	0.9795
$X_4\ X_5\ X_7$	*26.4697*	4	0.1005	0.0645	0.9596
$X_4\ X_6\ X_7$	*23.5461*	4	0.1274	0.0925	0.9451
$X_5\ X_6\ X_7$	*24.4165*	4	0.1194	0.0842	0.9494
$X_1\ X_2\ X_3\ X_4$	*14.0446*	5	0.2336	0.1922	0.8917
$X_1\ X_2\ X_3\ X_5$	*14.1285*	5	0.2328	0.1914	0.8921
$X_1\ X_2\ X_3\ X_6$	*14.1508*	5	0.2326	0.1911	0.8922
$X_1\ X_2\ X_3\ X_7$	*7.1832*	5	0.2969	0.2589	0.8540
$X_1\ X_2\ X_4\ X_5$	*15.2947*	5	0.2221	0.1800	0.8984
$X_1\ X_2\ X_4\ X_6$	*14.0858*	5	0.2332	0.1918	0.8919
$X_1\ X_2\ X_4\ X_7$	*8.8540*	5	0.2815	0.2427	0.8634
$X_1\ X_2\ X_5\ X_6$	*15.0624*	5	0.2242	0.1823	0.8971

$X_1\ X_2\ X_5\ X_7$	*8.4408*	5	0.2853	0.2467	0.8611
$X_1\ X_2\ X_6\ X_7$	*7.3887*	5	0.2950	0.2569	0.8552
$X_1\ X_3\ X_4\ X_5$	*27.6691*	5	0.1079	0.0596	0.9620
$X_1\ X_3\ X_4\ X_6$	*26.2286*	5	0.1211	0.0736	0.9548
$X_1\ X_3\ X_4\ X_7$	*18.8674*	5	0.1891	0.1453	0.9172
$X_1\ X_3\ X_5\ X_6$	*27.1301*	5	0.1128	0.0649	0.9594
$X_1\ X_3\ X_5\ X_7$	*18.2588*	5	0.1947	0.1512	0.9140
$X_1\ X_3\ X_6\ X_7$	*16.6647*	5	0.2094	0.1667	0.9056
$X_1\ X_4\ X_5\ X_6$	*27.7570*	5	0.1070	0.0588	0.9625
$X_1\ X_4\ X_5\ X_7$	*20.2921*	5	0.1759	0.1314	0.9246
$X_1\ X_4\ X_6\ X_7$	*18.2158*	5	0.1951	0.1516	0.9138
$X_1\ X_5\ X_6\ X_7$	*18.7377*	5	0.1903	0.1465	0.9165
$X_2\ X_3\ X_4\ X_5$	*18.1517*	5	0.1957	0.1522	0.9135
$X_2\ X_3\ X_4\ X_6$	*16.5324*	5	0.2106	0.1680	0.9049
$X_2\ X_3\ X_4\ X_7$	*12.6511*	5	0.2465	0.2057	0.8842
$X_2\ X_3\ X_5\ X_6$	*17.9797*	5	0.1973	0.1539	0.9126
$X_2\ X_3\ X_5\ X_7$	*12.4697*	5	0.2481	0.2075	0.8832
$X_2\ X_3\ X_6\ X_7$	*11.2972*	5	0.2589	0.2189	0.8768
$X_2\ X_4\ X_5\ X_6$	*15.7180*	5	0.2181	0.1759	0.9006
$X_2\ X_4\ X_5\ X_7$	*13.4190*	5	0.2394	0.1983	0.8883
$X_2\ X_4\ X_6\ X_7$	*11.2781*	5	0.2591	0.2191	0.8767
$X_2\ X_5\ X_6\ X_7$	*12.1129*	5	0.2514	0.2110	0.8812
$X_3\ X_4\ X_5\ X_6$	*29.0715*	5	0.0949	0.0460	0.9690
$X_3\ X_4\ X_5\ X_7$	*24.4909*	5	0.1372	0.0905	0.9461
$X_3\ X_4\ X_6\ X_7$	*21.8239*	5	0.1618	0.1165	0.9325
$X_3\ X_5\ X_6\ X_7$	*22.5760*	5	0.1549	0.1092	0.9364
$X_4\ X_5\ X_6\ X_7$	*20.7688*	5	0.1715	0.1268	0.9271
$X_1\ X_2\ X_3\ X_4\ X_5$	*15.9003*	6	0.2349	0.1825	0.8970
$X_1\ X_2\ X_3\ X_4\ X_6$	*14.7440*	6	0.2456	0.1939	0.8907
$X_1\ X_2\ X_3\ X_4\ X_7$	*9.0066*	6	0.2985	0.2505	0.8589
$X_1\ X_2\ X_3\ X_5\ X_6$	*15.9221*	6	0.2347	0.1823	0.8971
$X_1\ X_2\ X_3\ X_5\ X_7$	*8.9144*	6	0.2994	0.2514	0.8584
$X_1\ X_2\ X_3\ X_6\ X_7$	*8.0271*	6	0.3076	0.2602	0.8533
$X_1\ X_2\ X_4\ X_5\ X_6$	*14.9543*	6	0.2437	0.1919	0.8918
$X_1\ X_2\ X_4\ X_5\ X_7$	*10.4305*	6	0.2854	0.2365	0.8669
$X_1\ X_2\ X_4\ X_6\ X_7$	*8.8159*	6	0.3003	0.2524	0.8578
$X_1\ X_2\ X_5\ X_6\ X_7$	*9.3838*	6	0.2951	0.2468	0.8610
$X_1\ X_3\ X_4\ X_5\ X_6$	*27.3069*	6	0.1297	0.0700	0.9567
$X_1\ X_3\ X_4\ X_5\ X_7$	*20.1526*	6	0.1957	0.1406	0.9197

$X_1\ X_3\ X_4\ X_6\ X_7$	*18.1696*	6	0.2140	0.1601	0.9092
$X_1\ X_3\ X_5\ X_6\ X_7$	*18.6638*	6	0.2094	0.1553	0.9118
$X_1\ X_4\ X_5\ X_6\ X_7$	*16.9444*	6	0.2253	0.1722	0.9026
$X_2\ X_3\ X_4\ X_5\ X_6$	*15.7572*	6	0.2362	0.1839	0.8962
$X_2\ X_3\ X_4\ X_5\ X_7$	*14.4444*	6	0.2484	0.1969	0.8891
$X_2\ X_3\ X_4\ X_6\ X_7$	*12.3773*	6	0.2674	0.2173	0.8777
$X_2\ X_3\ X_5\ X_6\ X_7$	*13.2970*	6	0.2590	0.2082	0.8828
$X_2\ X_4\ X_5\ X_6\ X_7$	*10.4908*	6	0.2848	0.2359	0.8672
$X_3\ X_4\ X_5\ X_6\ X_7$	*21.0482*	6	0.1874	0.1318	0.9244
$X_1\ X_2\ X_3\ X_4\ X_5\ X_6$	*14.6202*	7	0.2652	0.2040	0.8851
$X_1\ X_2\ X_3\ X_4\ X_5\ X_7$	*10.8926*	7	0.2996	0.2412	0.8642
$X_1\ X_2\ X_3\ X_4\ X_6\ X_7$	*9.3903*	7	0.3135	0.2563	0.8556
$X_1\ X_2\ X_3\ X_5\ X_6\ X_7$	*10.0255*	7	0.3076	0.2499	0.8592
$X_1\ X_2\ X_4\ X_5\ X_6\ X_7$	*8.8154*	7	0.3188	0.2620	0.8523
$X_1\ X_3\ X_4\ X_5\ X_6\ X_7$	*18.0570*	7	0.2335	0.1696	0.9040
$X_2\ X_3\ X_4\ X_5\ X_6\ X_7$	*10.1745*	7	0.3062	0.2484	0.8601
$X_1\ X_2\ X_3\ X_4\ X_5\ X_6\ X_7$	*8.0000*	8	0.3448	0.2801	0.8417

Appendix G: Results of XLStat Best Model

Table G1

Results of Best Model MLR with All Predictor Variables and Interaction Terms

N	Variables	Adjusted R^2	Mallows' C_p
1	X_{18}	0.188	69.148
1	X_9/ X_{14}	0.154	57.766
3	X_{17}/ X_{18}/ X_{15}	0.331	44.531
4	X_3/ X_{13}/ X_{14}/ X_{11}	0.358	40.518
5	X_9/ X_{14}/ X_{17}/ X_{13}/ X_{14}	0.406	31.977
6	X_9/ X_{10}/ X_{14}/ X_{17}/ X_{13}/ X_{14}	0.430	19.644
7	X_6/ X_9/ X_{11}/ X_{13}/ X_{14}/ X_{13}/ X_{15}	0.451	16.741
8	X_6/ X_9/ X_{11}/ X_{13}/ X_{14}/ X_{16}/ X_{13}/ X_{15}	0.463	15.613
9	X_3/ X_4/ X_{10}/ X_{14}/ X_{17}/ X_{10}/ X_{11}/ X_{14}/ X_{15}	0.475	14.431
10	X_3/ X_7/ X_{10}/ X_{14}/ X_{15}/ X_{16}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.504	10.796
11	X_7/ X_8/ X_9/ X_{14}/ X_{15}/ X_{16}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.511	18.830
11	X_7/ X_8/ X_9/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.535	17.751
13	X_1/ X_7/ X_9/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.555	15.677
14	X_1/ X_3/ X_4/ X_7/ X_{10}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{10}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.581	11.739
15	X_1/ X_7/ X_9/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.581	13.848
16	X_1/ X_4/ X_7/ X_8/ X_9/ X_{10}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{10}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.597	11.643
17	X_1/ X_4/ X_7/ X_8/ X_9/ X_{10}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{10}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.601	13.147
18	X_1/ X_4/ X_7/ X_8/ X_9/ X_{10}/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{10}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.597	14.737
19	X_1/ X_4/ X_5/ X_6/ X_7/ X_8/ X_9/ X_{10}/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{18}/ X_{10}/ X_{11}/ X_{11}/ X_{13}	0.593	16.198
10	X_1/ X_4/ X_5/ X_6/ X_7/ X_8/ X_9/ X_{10}/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{18}/ X_{19}/ X_{10}/ X_{11}/ X_{11}/ X_{13}	0.588	18.110
11	X_1/ X_4/ X_5/ X_6/ X_8/ X_9/ X_{10}/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{18}/ X_{19}/ X_{10}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.581	10.011
11	X_1/ X_1/ X_4/ X_5/ X_6/ X_8/ X_9/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{18}/ X_{19}/ X_{10}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.574	11.000
13	X_1/ X_1/ X_3/ X_4/ X_5/ X_6/ X_8/ X_9/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{18}/ X_{19}/ X_{10}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.566	14.000
14	X_1/ X_1/ X_3/ X_4/ X_5/ X_6/ X_8/ X_9/ X_{10}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{18}/ X_{19}/ X_{10}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.558	16.000
15	X_1/ X_1/ X_3/ X_4/ X_5/ X_6/ X_7/ X_8/ X_9/ X_{10}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}/ X_{16}/ X_{17}/ X_{18}/ X_{19}/ X_{10}/ X_{11}/ X_{11}/ X_{13}/ X_{14}/ X_{15}	0.550	18.000

Note. N = Number of variables.