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Determinants of Customer Relationship Marketing of Mobile Services Providers in Sri Lanka: - An application of Exploratory Factor Analysis

Velnampy[1*] S.Sivesan[2]
1. Prof and Dean, Faculty of Management Studies and Commerce, University of Jaffna, Sri Lanka
2. Department of Marketing, Faculty of Management Studies and Commerce, University of Jaffna, Sri Lanka
* E-mail of the corresponding author: tvnampy@yahoo.co.in

Abstract
Customer relationship marketing is very important concept to attract and keep the customers in organizations. In modern business world, marketing focus reflect the move away from transactional marketing to relationship marketing. There are no comprehensive and empirical researches in that field especially in mobile service. Data was collected through a seven points Likert type summated rating scales of questionnaires from strongly disagree to (1) to strongly agree (7) were adopted to identify indicators. Sophisticated statistical model as "Exploratory Factor Analysis" (EFA) has been used. The results show three factors extract from the analysis that together accounted 67.007% of the total variance. These factors were categorized as trust, rapport, and accuracy.
Key word: Customer relationship marketing, Trust, Rapport, Accuracy

1. Introduction

In today's business world, customer relationship marketing is considered as the heart of the marketing. Many professional and academicism have defined the term customer relationship marketing in different ways. "Berry (1983) was the first one who used the term relationship marketing, which was used as a relationship perspective. Earlier there was a paradigm shift from transaction marketing to relationship marketing. Gronroos (1994) defined as customer relationship marketing as establishing, maintaining and enhancing relationships with customers and other partners. It can be achieved by a mutual exchange and fulfillment of promises. Relationship marketing concerns attracting, developing, and retaining customer relationships (Leonard Berry and Parasuraman 1985). Its central tenet is the creation of "true customers" – Customers who are glad with the firm, they selected who perceive that they are receiving value and feel valued, who are likely to buy additional services from the firm, and who are unlikely to defect to a competitor. In industrial marketing, customer relationship marketing is referred to as marketing oriented towards strong, lasting relationships with individual accounts (Jackson, 1985).

In marketing, many scholars and researchers (Nevin, 1995, Vovra, 1992, Yau, 2000) used the terms of customer relationship marketing and customer relationship management as same meanings even though, Das (2009) articulated significant differences between customer relationship marketing and Customer Relationship Management. Customer relationship marketing is relatively more strategic in nature while customer relationship management is more tactical. Implementing customer relationship marketing using information technology is a part of the customer relationship management (Ryals & Payne, 2001). Customer relationship marketing concentrates more on the emotional and behavioural, which are determined by bonding, empathy, reciprocity and trust. On the other hand, customer relationship management focuses more on managerial concepts such as how management can maintain and enhance customer relationships (Sin, 2005and Yau, 2000).

This study examines indicators which determine the customer relationship marketing of the mobile service providing companies in Sri Lanka. Finding of this study are useful for mobile service providing companies to enhance and build the high level customer relationship.

2. Review of Literature

Customer relationship marketing is the step of evolution of marketing. In the current world, business organizations more concentrated on consumerized product and service. Hence, organizations used customer relationship marketing as a tool for gaining competitive advantages. Many researchers clearly pointed out similarity and dissimilarity between customer relationship marketing and customer relationship management. Customer relationship marketing gives attention to the customer's psychological factors, whereas customer relationship management contemplates on managerial concept. Lages (2005) proposed customer relationship marketing determined by information sharing, communication quality, long term relationship orientation and satisfaction with relationship.
Hewett (2002), Hibbard (2001) expressed trust and commitment are two key factors to build/construct customer relationship marketing. However, Ndubisi (2007) found that trust contributes more significantly than commitment. Duncan and moriarty, 1998; Lages 2005; Morgan & Hunt, 1994 explored that communication is generally considered a key antecedent or driver of a relationship and customer relationship quality. Helfert, 2002; Morgan & Hunt, 1994; Verhof, 2003 pointed out that commitment is considered necessary for customer relationship continuation, an antecedent to customer retention, and to positively affect relationships. Kumar, Schear and Streenkamp (1995) demonstrated that relationship with greater total independence exhibit higher trust, stronger commitment, and lower conflict than relationships with lower interdependence.

Crosby (1990) expressed that customer relationship determined by trust and satisfaction. Effective quality communication aids relationship initiation and building, and is brought about through timeliness, frequency, accuracy, completeness and credibility (Mohr & Sohi, 1995; Mohr & Spekman, 1994). Storbacka, Strandvik, and Gronroos (1994) identified five distinct factors Which build the customer the customer relationship service quality, customer satisfaction, commitment and social bound. Dorsch (1998) proposed that following six factors such as trust, satisfaction, commitments, opportunism, customer orientation, ethical profile. Generally customer relationship marketing affecting by trust, commitment and communication quality while helping to initiate, develop and sustain customer relationships (Berry, 1995; Kapoulas , 2004; Ling & Yen, 2001; Mitussis, 2006; Too, Souchon, & Thirkell, 2001).
Based on the above literatures, there are lack of comprehensive and empirical researches in this field especially in telecommunication sectors and also researchers have used only some indicates or variable such as trust, commitment, communication, and conflict handling to measure the customer relationship marketing but this study attempt to fill the gap. Present study is conducted the determinants of customer relationship marketing indicators of the mobile service providers with sample of one hundred seven respondents in Jaffna district.

3. Research methodology

3.1 Data Sources

Given the nature of the present study, it was required to collect data from the primary and secondary sources. Primary data were collected through the questionnaire. Secondary data were collected from research studies, books, journals, newspapers and ongoing academic working papers. The collected data may be processed and analyzed in order to make the study useful to the practitioners, researchers, planners, policy makers and academicians.

3.2 Measures

The questionnaire was administrated to customers of the Dialogue and Mobital companies. Questionnaire is prepared with seven point Likert- scaling system. In a way, qualitative data converted into quantitative and then details analysis was made with appropriate statistical tools in order to prove the objective and to test the hypothesis. Questionnaire is designed to gather the data. Questionnaire consists of 20 statements to measure the customer relationship marketing in mobile service industry. Customer relationship marketing can be measured through trust, commitment, communication, promise, cooperation, power, empathy, rapport, duration of the relationship and accuracy.

3.3 Sampling

Using the random sampling technique, a total of 130 respondents were selected as a sample of the study. One hundred and seven respondents completed the questionnaire and the rest did not return it for unknown reasons.

4. Result and discussion

Factor analysis method has been employed to identify the dimension importance underlying dimensions of customer relationship marketing in mobile service providing companies.

KMO and Bartlett's test

Kasier – Meyer – OlKin (KMO) test assist to measure sample adequacy. The KMO statistic varies between 0 and 1. A value close to 1 indicates that patterns of correlation are relatively compact and so factor analysis should yield distinct and reliable factors. Kaiser (1974) recommends the accepting values of greater than 0.5. Furthermore, values between 0.5 and 0.7 are mediocre, value between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb.

Table No – 02 KMO and Bartlett's test

Kaiser –Meyer – Olkin Measure of sampling adequacy	**0.691**
Bartlett's test of sphericity Appox Chi Square	474.662
Df	45
Significance	.000

Table No -02 indicates that the KMO is 0.691, which falls into the range of being mediocre; factor analysis is appropriate for these data. Bartlett's test of sphericity (Barlett, 1950) is the third statistical test applied in the study for verifying its appropriateness. This test should be significant i.e., having a significance value less than 0.5. According to Table No -02, test value of Chi – Square 474.662 is significant. After examining the reliability and validity of the scale and testing appropriateness of data as above, Suitability of variables next is identified using a concept called "communality". Communalities indicate the amount of variance in each variable that is accounted for. Table No - 03shows that initial communalities and extraction communalities. Initial communalities are estimates of the variance in each variable accounted for by all components or factors. Initial communalities are set as 1.0 for all variables in Principal Component Method of Extraction of Factors. Extraction communalities are estimates of variance in each variable accounted for by the factors in the solution. Accordingly, all items are fit to the factor solution. Because, extraction value is more than 0.3 for each items.

Table N0 – 03 Principal Component Analysis Communalities

Items	**Initial**	**Extraction**
Trust	1.000	.749
Commitment	1.000	.750
Communication	1.000	.431
Promise	1.000	.543
Cooperation	1.000	.612
Power	1.000	.667
Empathy	1.000	.724
Rapport	1.000	.831
Duration of relationship	1.000	.639
Accuracy	1.000	.753

In this study, Principal Component analysis (PCA) was employed by the Varimax rotation, (generally, researchers' recommend as varimax) When the original ten variables were analyzed by the PCA. Four variables extracted from the analysis with an Eigen value of greater than 1, which explained 67.007percent of the total variance.

Table No- 04 Total Variance Explained

Component	Initial Eigen Value			Extraction Sums of Squared Loading		
	Total	% of Variance	Cumulative	Total	% of Variance	Cumulative
1	4.199	41.993	41.993	4.199	41.993	41.993
2	1.417	14.167	56.159	1.417	14.167	56.159
3	1.085	10.848	67.007	1.085	10.848	67.007
4	0.960	9.597	76.604			
5	0.669	6.691	83.295			
6	0.598	5.977	89.272			
7	0.413	4.129	93.401			
8	0.276	2.761	96.162			
9	0.250	2.497	98.659			
10	0.134	1.341	100.000			

One method to reduce the number of factors to something below that found by using the "eigen value greater than unity" rule is to apply the scree test (Cattell, 1966). In this test, eigen values are plotted against the factors arranged in descending order along the X- axis. The number of factors that correspond to the point at which the function, so produced, appears to change slope, is deemed to be number of useful factors extracted. This is a somewhat arbitrary procedure. Its application to this data set led to the conclusion that the first four factors should be accepted

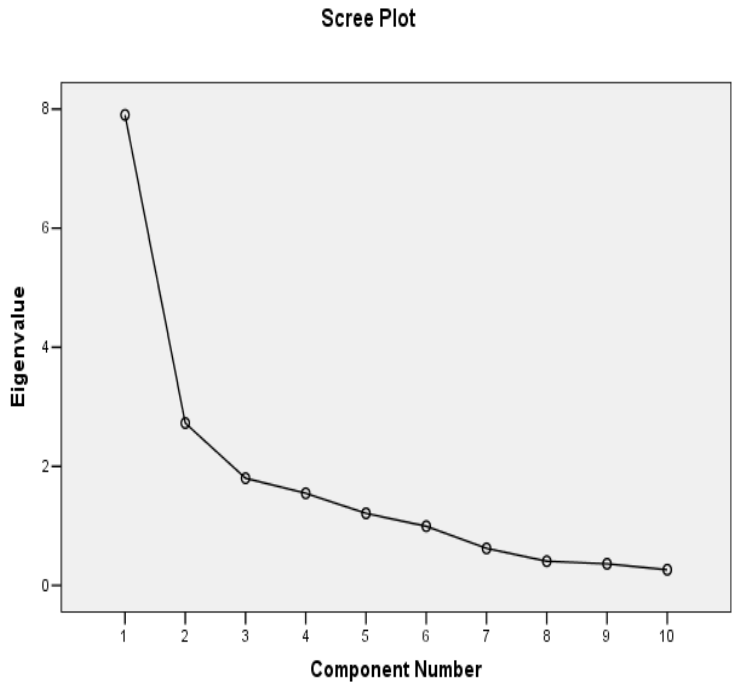

Figure 01: Rotated Component Matrix

Variable	1	2	3
Trust	0.84		
Power	0.76		
Cooperation	0.65		
Promise	0.55		
Communication	0.54		
Rapport		0.87	
Empathy		0.75	
Duration of relationship		0.73	
Accuracy			0.82
Commitment			0.81
Eigen Value	4.199	1.417	1.085
Proportion of Variance	41.993	14.167	10.848
Cumulative Variance Explained	10.848	56.125	67.007

Table No -05 Rotated Component Matrix

The Table No - 05 show that factors were divided into the three groups. Each of three customer relationship marketing factors listed in table no -05 is labelled according to the name of the value that loaded most highly for those CRM. It is worth declaring out here that factor loading greater than 0.30 are considered significant. 0.40 are considered more important and 0.50 or greater are considered very significant. The rotated (Varimax) component loadings for three components (factors) are presented in Table No- 05. For parsimony, only those factors with loadings above 0.50 were considered significant (Pal, 1986; Pal and Bagi, 1987; Hari, Anderson, Tatham, and Black, 2003). The higher a factor loading, the more would its test reflect or measure as customer relationship marketing (Pallant, 2005). Actually in this study, minimum factor component loadings of 0.54 or higher are considered significant for EFA purposes. The customer relationship marketing variable getting highest loading becomes the title of each factor of customer relationship marketing. e.g. 'trust'- title of customer relationship marketing factor-I and the like.

Group –I **Trust** include the thirteen factors such as trust, power, cooperation, promise and communication, with loading ranging from 0.84 to 0.54.

Group- II **Rapport** consists of three factors such as rapport, empathy, and durations of relationship with loadings ranging from 0.87 to 0.73.

Group- III **Accuracy** include two factors such as completeness and relevant with loading ranging from 0.82 to 0.81.

Reference

Aisle Dovaliene. and Regina virvilaite (2008), "Customer value and its contribution to the longevity of relationship with service provider , the case of theatre industry" engineering economics no, 66-77.

Anton's. (1996), "Customer relationship management making hard decisions with scoff numbers" Prentice- hall, New Jersey.

Arum Sharma. Jadish n. sheath. (1997). Relationship Marketing Management. 26-87-89.

Bhattacherjee, A. (2002). Individual trust in online firms: Scale development and initial test. Journal of Management Information Systems, 19(1), 211-241.
Bolton, R. N; & Drew, J. H. (1991). "A Multi-Stage Model of Customer's Assessments
Briggs, I; Myers, P. B. (1980) "*Gifts Differing*". Davies Black Publishing. 69-74.
Bringing Quality, Customer Service and Marketing Together". Butterworth-Heinemann,
Buttle, F. (2000). "The S.C.O.P.E. of Customer Relationship Management". (Online). http://www.crm-forum.com.
Carratu,V.(1987) commercial counterfeiting, in murphy, J.(Ed.),Branding :A key marketing tool. The macmillan press Ltd.
Champion, R. (Winter 2002) *Journal of Staff Development*, Vol. 23, No. 1.
Christopher bull (2010), "Customer relationship management (CRM) system, International and disintermediation. The case of INSG'', international journal of information management, 94-97.
Christopher, M; Payne, A. F. T; & Ballantyne, D. (1991) "*Relationship Marketing:*
Colgate, M & Smith, J.B. (2007). "Customer Value Creation: A Practical Framework" In *Continuous Service Provider: The Role of Satisfaction*". Marketing Science 17 (1): 45-65.
Kottler , Philip ,presentation at the trustees meeting of the marketing science institute in november1990, Boston reported in Robert M.margon and Shelby D.Hunt the commitment-Trust theory of relationship marketing . Journal of marketing 58, 20-38(1994).
Kuvykaite, R.gaminio marketing as .kaunatechnologijia 2001
Loan fovea. Silvia fovea. Manual pole (2011), "Applying relationship marketing principles based on customer satisfaction research in a direct marketing company in Romania,' international journal of business and management studies. Vole 3.109-119.
Nudism. (2004). "Understanding the salience of cultural dimensions on relationship marketing. Its underpinnings and aftermaths'' cross cultural management, vol.ll 70-89.
Ogwueleka. Francisca nonyelum (2009) "potential value of mining for customer relationship marketing in the banking industry'' Advances in natural and applied sciences' (1).73-78.
Palmer. a. (1997), Defining relationship marketing, An international perspective'' management decision, Vol.35.319-321.
Parasuraman V.A Zeithaml&L.L.berry "A conceptual model of service quality and its implication for future research." Journel of marketing, vol.49, no fall,1985.pp.41-50