



VALIDATION OF A CRM SCALE FOR THE B2C MARKET

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Given the strategic relevance of Customer Relationship Management (CRM) for organizations nowadays and the lack of instruments customized for the business-to-consumer (B2C) market in general, the main objective of this study is to develop and validate a reliable and valid scale to measure customers' perceptions regarding aspects they consider relevant in their relationship with companies in general that might influence their shopping experiences. A study has been conducted with an American sample for the development and validation of the Customer Relationship Management Scale (CRMS) using exploratory factor analysis (EFA). The scale's reliability was assessed through Cronbach's alpha (EFA). The result was a one-factor model with high-reliability and good fit. This research is a starting point to provide a comprehensive measure of customer relationship management based on customers' perspectives.

Keywords: CRM, scale development, marketing strategies

1 INTRODUCTION

The main authors of Customer Relationship Management (CRM) (McKenna, 1999; Ngai, 2005; Payne, 2006; Vavra, 1993; Wilson & Vlosky, 1997) agree on the relevance of managing the relationship between organizations and its customers. Thus the adaptation of the organizational capacity to detect opportunities in the market and the constant effort of companies on establishing long term relationships with its business partners, especially with its customers, has been established as a priority on enterprises (Demo & Ponte, 2008).

Considering both the strategic relevance of CRM for organizations nowadays, and the lack of measuring scales customized for the B2C market as well as the importance of validating a scale in different countries for improved generalizability, the main objective of this study is to validate the Customer Relationship Management Scale (CRMS) in the US, based on the previous CRM scales that Rozzett and Demo (2010, 2011) developed and validated in Brazil. Some CRM scales were found in the literature (e.g., Wilson & Vlosky, 1997; Sin, Tse & Yim, 2005; Zulkifli & Tahir, 2012) but none focused on the customer's relationship marketing perception in the B2C market in general, in other words, not focused on a specific firm or industry.

Furthermore, if the CRMS shows theoretical consistency and also good psychometric indexes when validated in a different country (US), it will be a psychometrically and operationally valid measure to be used in relational studies from both Marketing and Consumer Behavior fields. Additionally, it could be used as a diagnostic tool to identify CRM aspects where specific improvements are needed, as well as an instrument of evaluation to help managers better understand how to meet client's needs and deliver high-value products and services.

2 THEORETICAL BACKGROUND

Grönroos (1994), Sheth and Parvatiyar (2002), and Payne (2006) agreed that relationship marketing represents a paradigm shift on marketing concepts, a change on marketing orientation from just attracting customers to having customer's retention and loyalty. For Payne (2006), CRM provides opportunities to use information, know clients better, offer value by customized sales and develop long-term relationships. The company should have know-how on processes, operations and integration in order to allow that the core of marketing become the philosophy that guides the business. This vision confirms the holistic idea of relationship marketing, where there is interaction among all parts of the organization.

On the same line, McKenna (1999) presents a strategic relationship marketing approach placing the customer in first and changing the marketing role of manipulating customers to making a real commitment with them. The author emphasizes the retention of profitable customers, multiple markets and an approach regarding multifunctional marketing, in which the responsibility for marketing strategies development and relationship with the customer is not limited to the marketing department only. According to Reichheld and Sasser (1990, pp.105), as the relationship between the organization and the customer extends the profits grow. Due to the large increase in competition and the constant technological improvement, customers have a much larger range of choices in comparison to what they previously had.

In this sense, Payne (2006) states that the distinguishing factor, then, becomes the delivery of an exceptional, distinct and consistent service.

Competitive advantage can be acquired by knowing the expectations, preferences, and behavior of customers. Thus, retaining customers, developing a relationship and continuously satisfying them can be considered the basis for a successful trajectory for most organizations. According to Demo and Ponte (2008), it costs around 10 times more to attract customers than to retain them.

For Payne (2006), CRM is a strategic holistic approach to manage the relationship with customers in order to create value to the stockholder. He states that although CRM provides more opportunities to understanding the customer through data and info utilization and to implementing the relationship marketing strategies in a better way, it is not limited to an information system or a technologic tool. The author stresses that the importance of defining CRM correctly is not a semantic preciousness. Such

definition significantly impacts the way CRM is understood, implemented and practiced in organizations.

Huang and Xiong (2010) notice that CRM has reached a strategic maturity and it influences the entire cycle of life of a product and not only the before or after-sales stages. Still on the enlargement of CRM influence, Ernst, Hoyer, Krafft and Krieger (2011) sustain that its potential has been only investigated on already existent products cases, but it should be considered on the development of new products as well, once their studies showed that CRM has a positive correlation with performance and success of new products.

The most recent literature reviews of CRM were from Ngai, Xiu and Chayu (2009) and Wahlberg et al. (2009). Ngai, Xiu and Chayu (2009) wrote the first academic review on the application of data mining techniques for CRM. The article provides an academic database of the literature from 2000 to 2006 that comprehends 24 scientific journals and proposes a classificatory scheme that comprises 900 articles, which were identified and analyzed regarding the direct relevance for the application of data mining techniques for CRM.

The categorization done by Ngai, Xiu and Chayu (2009) took into account 4 CRM dimensions (customer identification, customer attraction, customer retention and customer development) as well as 7 data mining functions (association, classification, cluster, prediction, regression, discovery of sequential patterns and visualization). The results showed that customer retention is the most researched area of all and the one-to-one marketing and loyalty programs are the most investigated themes. On the other hand, models of classification and association are the most commonly used in data mining regarding CRM.

Wahlberg et al. (2009) contributed to the CRM research knowledge by questioning the evolution of CRM research through time and identifying trends and research topics from 4 investigation areas: strategic CRM, analytical CRM, operational CRM and collaborative CRM. According to Wahlberg et al. (2009), the results showed maturity in the CRM scientific research field, dominated by CRM subfields of strategic and analytic CRM, including a change from analytic to strategic CRM, which was the most popular by the end of the studied period of time. Another conclusion withdrawn from the study was the predominance of the research on big companies at the expense of medium and small businesses whose characteristic must be taken into account.

Regarding CRM measures, 7 measurement scales were found with different perspectives. First, Wilson and Vlosky (1997) developed a CRM scale for the business-to-business (B2B) market. Sin, Tse and Yim (2005) validated a scale to measure the CRM dimensions practiced by the companies in the financial service sector of Hong Kong. Harmeem and Sandhu (2008) developed a scale for CRM applied to manufacturing industries in India.

Rozzett and Demo (2010, 2011) developed a scale for the B2C market to assess customer's perception of relationship in general. More recently, Öztaysi, Sezgin and Özok (2011) proposed a tool for the measurement of CRM processes in Turkey that addresses seven different processes.

Agariya and Singh (2012a, 2012b) developed a CRM Index for both banking and insurance sector in India and Zulkifli and Tahir (2012) developed and validated a scale for CRM practices construct consisted of six dimensions of CRM specifically for bank's customers.

The items of the CRMS proposed here was developed based on the items of the previous scale validated by Rozzet and Demo (2010, 2011) with Brazilian samplings because those scales are the only ones customized to the B2C market in general, not applied to a specific industry so far. Rozzet and Demo validated the scale trough Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) as well. Both analyses presented very reliable psychometric parameters.

Twenty items were developed based on the Rozzet and Demo's scales and also on the literature review, and composed the application version of the CRMS (see Chart 1).

CHART 1: Application Version of the CRMS

1) This company deserves my trust.
2) I recommend this company to friends and family.
3) This company treats me as an important customer.
4) My shopping experiences with this company are better than I expected.

5) I identify myself with this company.
6) This company treats its customers with respect.
7) This company offers personalized customer service.
8) The products/services sold by this company are a good value (the benefits exceed the cost).
9) This company solves problems efficiently.
10) This company tries to get to know my preferences, questions and suggestions.
11) This company rewards my loyalty.
12) This company has communication channels for complaints and suggestions (e.g., toll free, online customer service, etc.).
13) This company provides information about its policies, projects, products/services and new releases.
14) I'm willing to buy other products/services from this company.
15) This company encourages interaction among its customers (e.g., events, Facebook, etc).
16) This company is socially and environmentally friendly.
17) This company has good facilities (either physical, in case of stores, or virtual, in case of websites).
18) There are a few competitors to this company that have the same importance to me.
19) This company offers convenience to its customers (e.g., online services, home delivery, 24-7 customer service).
20) The products/services sold by this company are high quality.

3 METHODS

This section will detail the study conducted for the development and validation of the Customer Relationship Management Scale in the United States (US). For such purpose, an American sample (N=210) was collected online using MTurk in order to ensure the presence of a broad variety of American customers. This diversification indicates sampling variability and representativeness. Scale reliability was assessed by Cronbach's alpha.

Data were collected from 210 employees of various organizations. Of the employees, 65% were male, 63% were White or Caucasian, 55% were under the age of 26, 49.5% had a Bachelor degree, 43.5% had been customers of the companies chosen between 1 and 5 years, and 67% purchase from the companies chosen on a weekly (33%) or monthly (34%) base.

The data were examined (searched for incorrect values, missing data and outliers) and the assumptions for multivariate analysis were checked, following the procedures recommended by Tabachnick and Fidell (2007) and Hair et al. (2009) The final sample counted then with 200 subjects. Hair et al. (2009) say that for an adequate sample size, it is necessary to have between 5 and 10 individuals for each item of the instrument. Nonetheless, the authors state that any factor analysis with less than 200 individuals can hardly be considered suitable. The sample size with 200 subjects attended, therefore, both criteria.

In order to perform the EFA, the correlation matrix, the matrix determinant and the results of the Kaiser-Meyer-Olkin (KMO) sampling adequacy test were analyzed regarding factorability. For factor extraction, Principal Components Analysis (PCA) was used. Once the matrix was considered factorable, the eigenvalues, percentage of explained variance of each factor, scree plot graphic and parallel analysis were then examined in order to determine the quantity of factors to be extracted.

After defining the quantity of factors, a Principal Axis Factoring (PAF) analysis was run using Promax rotation - since correlation among factors was expected, which is common in behavioral phenomena. Cronbach's alpha was used to check the reliability of each factor.

4 RESULTS

The analyses' results confirmed the matrix high factorability to perform the exploratory factor analysis. KMO was 0.931, classified by Kaiser (1974) as marvelous. The determinant of the matrix was extremely close to zero indicating that the number of factors is lower than the number of items. Through Principal Components Analysis, it was possible to decide how many factors would be extracted. The analysis of the criteria adopted (eigenvalues higher than 1.0, explained variance percentage of each factor above 3%, scree plot graphic visual analysis and parallel analysis) brought us to a one-factor

solution, with a possibility of a two factors solution, according to the eigenvalues and explained variance percentage criteria.

By running the Principal Axes Factoring (PAF) analysis for two factors, a high-significant correlation between them ($r = 0.744$) was found, indicating the presence of a second order factor. Hence, the one-factor solution was chosen. After 4 iterations, only 14 items remained from the 20 original items. Thus, the CRMS resulted in a one-factor instrument with 14 items. All the items were measured with a five-point Likert-type scale ranging from 1 = "strongly disagree" to 5 = "strongly agree".

The items are compatible with the theoretical review done, explaining 50% of the construct's total variance, which can be considered worthy, especially for one-factor structures. The validity or quality of the items that composed each factor was also analyzed. Considering that a valid item is the one that well represents the factor, that is, an item with a good factor loading, the minimum acceptable load was .50 (Hair et al, 2009).

Comrey and Lee (1992) classified items with loadings higher or equal .71 as excellent; higher or equal .63 as very good; higher or equal .55 as good; higher or equal .45 as reasonable; and higher or equal .32 as poor. Thus, as to the items' quality, 100% of them were classified as excellent, very good and good.

Concerning the reliability, internal consistency or precision of the factors, Nunnally and Bernstein (1994) suggest values above .70 for modest reliability, .80 for a good one and above .90 for high reliability. Therefore, the CRMS showed high reliability, with alpha coefficient equals to .92. Table 1 summarizes the main information of the scale.

TABLE 1: Description of the CRMS items

Item	Description	Loading
I6	This company treats its customers with respect.	.85
I4	My shopping experiences with this company are better than I expected.	.79
I3	This company treats me as an important customer.	.79
I2	I recommend this company to friends and family.	.77
I1	This company deserves my trust.	.69
I9	This company solves problems efficiently	.69
I20	The products/services sold by this company are high quality.	.66
I5	I identify myself with this company.	.66
I14	I'm willing to buy other products/services from this company.	.64
I7	This company offers personalized customer service.	.61
I10	This company tries to get to know my preferences, questions and suggestions.	.61
I17	This company has good facilities (either physical, in case of stores, or virtual, in case of websites).	.61
I8	The products/services sold by this company are a good value (the benefits exceed the cost)	.60

Note: total variance explained = 50%; total of items = 14 items.

5 DISCUSSION

5.1 Academic And Managerial Implications

The present study makes both academic and managerial contributions. First, it is an attempt to develop a model of CRM specifically designed for the B2C market, unattended so far. Second, empirical evidence that the CRM scale validated in the US is both reliable and valid constituting a measure that can be used in relational studies from the Marketing field was provided.

As to managerial implications, CRMS might be used as an instrument of evaluation to help managers better understand how to meet client's needs in order to deliver high-value products and services and get their loyalty through a long-term and profitable relationship.

Beyond, there is theoretical and empirical evidence that CRM is a critical success factor for business performance (e.g., Ryals, & Payne, 2001; Sheth, & Sisodia, 2002; Sin, Tse and Yim, 2005; Huang and Xiong's, 2010, Ernst et al, 2011).

Consequently, the CRMS may support managers' decision making and problem solving regarding identification of CRM areas where specific improvements are needed in order to achieve better organizational outcomes.

5.2 Limitations and Future Research Directions

The proposal of this chapter represents a first attempt to develop and test a CRM scale designed specifically for the B2C market in general. In spite of the scale's validation in Brazil, it would be useful to further assess the generalizability of the CRMS to other business environments such as European and Asian countries. Moreover, a confirmatory factor analysis using structural equation modeling must be run to confirm the structure obtained through EFA. With more replicative and creative research, a more comprehensive conceptual framework related to CRM can be developed in the future.

Also, the development of a time-series database and testing of the CRM structure validated here in a longitudinal framework would provide a refinement of the scale. Continued validations of the CRMS is recommended based on further research about new CRM trends, perspectives and also contemplating changes in business environments, so that a reliable measure of CRM aspects related to the business-to-consumer market can be developed on a continual basis. In this meaning, there could be a need of alteration or even deletion of original items.

Additionally, items representing aspects of CRM very disclosed and mentioned as important in the literature could be included in further validations, such as: the existence of communication channels for customers' complaints and suggestions (e.g., toll free, online customer service, etc), the encouragement of interaction among its customers (e.g., events, Facebook, etc), the offering of convenience to the customers (e.g., online services, home delivery, 24-7 customer service), the importance of the company be socially and environmentally friendly, if there are competitors to the company that have the same importance to its clients, the disclosure of information about the companies' policies, projects, products/services and new releases, and so forth.

6 CONCLUSION

The purpose of this study was to develop and validate a reliable and valid scale to measure customers' perceptions regarding aspects they consider relevant in their relationship with companies in general that might influence their shopping experiences. An instrument, the Customer Relationship Management Scale (CRMS), was produced showing validity, high reliability and construct validity as well.

Furthermore, a new purpose of how CRM strategies can be managed in the B2C market, where demands for convenience, customization and long-term relationships are increasing, is presented in order to provide superior organizational outcomes.

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