

## Some insights for a Relationship Marketing Model integrating SERVQUAL and Customer Loyalty in dental clinics

Ana M. Vargas<sup>1</sup>, Mercedes Grijalvo Martín<sup>1</sup>, Carmelo Mercado Idoeta<sup>2</sup>

**Abstract.** The demand of new services, the emergence of new business models, insufficient innovation, underestimation of customer loyalty and reluctance to adopt new management are evidence of the deficiencies and the lack of research about the relations between patients and dental clinics. In this article we propose the structure of a model of Relationship Marketing (RM) in the dental clinic that integrates information from SERVQUAL, Customer Loyalty (CL) and activities of RM and combines the vision of dentist and patient. The first pilot study on dentists showed that: they recognize the value of maintaining better patients however they don't perform RM actions to retain them. They have databases of patients but not sophisticated enough as compared to RM tools. They perceive that the patients value "Assurance" and "Empathy" (two dimensions of service quality). Finally, they indicate that a loyal patient not necessarily pays more by the service. The proposed model will be validated using Fuzzy Logic simulation and the ultimate goal of this research line is contributing a new definition of CL.

**Keywords:** Relationship Marketing; SERVQUAL; Customer Loyalty; Fuzzy Logic, Dental Clinic

---

1 Ana María Vargas Pérez (✉) Mercedes Grijalvo Martín (✉)  
Universidad Politécnica de Madrid (UPM). Escuela Técnica Superior de Ingenieros Industriales.  
Unidad Administración de Empresas- José Gutiérrez Abascal 2- 28006 Madrid, Spain.  
e-mail: ana.vargas@upm.es, e-mail: mercedes.grijalvo@upm.es

2 Carmelo Mercado Idoeta (✉)  
Universidad Rey Juan Carlos (URJC). Facultad de Ciencias Jurídicas y Sociales. Dpto. de  
Economía de la Empresa- Paseo de los Artilleros s/n. 28032 Madrid, Spain  
e-mail: carmelo.mercado@urjc.es

## 1. Introduction

Due to the need to manage the new models of dental clinics, the need for the dentist to introduce a new management, the demand for new services required by the patient and the lack of innovation in marketing and customer loyalty in dental clinics (González Serrano, et al., 2007), we propose to conduct an exploratory study as an antecedent to a model of Relationship Marketing (RM) in dental clinics, using information extracted from the patient perceptions of Service Quality (SQ), specifically of SERVQUAL, Customer Loyalty (CL) and activities of RM.

In the first phase of the pilot study results show that dentists: recognize the value of maintaining better patients, however they don't perform RM actions to retain them. They have databases of patients but not sophisticated enough as compared to RM tools. Perceive that the patients value "Assurance" and "Empathy" (two dimensions of service quality, see Parasunaman, et al., 1988). Finally, they indicate that a loyal patient not necessarily pays more by the service but the one that has ties of friendship with the clinic staff. The second phase of the pilot study will contribute to complete the behavior of patients and to validate the survey for this group. In the final phase of this research, the surveys will be conducted in order to elaborate the final model.

## 2. Service Quality

Grönroos (1984) introduces a SQ model based on the "expected service" (based on expectations) and "perceived service" (comparison of the expected service and the received service) and proposes a model based on three dimensions: technical, functional and corporate image.

Parasunaman et al. (1988) presents SERVQUAL, being widely recognized and applied. It has been subject to further revisions by their authors (Parasunaman, et al., 1991; Parasunaman, et al., 1994; Parasunaman, et al., 2000) and criticized by others (Cronin & Taylor, 1992; Cronin & Taylor, 1994; Cronin, et al., 2000; Carman, 1990; DeMoranville & Bienstock, 2003). SERVQUAL is based on customer perceptions of SQ. It is based on the differences (called "Gaps", 5 Gaps) between the expectations and the actual service the client receives. It is based on five dimensions: "Tangibles": physical facilities, equipment and appearance of personnel, "Reability": ability to perform the promised service dependably and accurately, "Responsiveness": willingness to help customers and provide prompt service, "Assurance": knowledge and courtesy of employees and their ability to inspire trust and confidence and "Empathy": caring and individualized attention the firm provides its customers.

Other models, such as SERVPERF (Cronin & Taylor, 1992), have been developed due to scientific disagreements with SERVQUAL. According to the authors of SERVPERF, it measures better the SQ because it does not consider expectations, in contrast to SERVQUAL. Later, Parasunaman, et al. (1994) gave a reply

to the Cronin & Taylor (1992) work. On the other hand, differences have been found in models of SQ: by the dimensions (Grönroos, 1984; Parasunaman, et al., 1988; Dabholkar, et al., 1996; Dabholkar, et al., 2000), by establishing the SQ as an antecedent of satisfaction (Cronin & Taylor, 1992; Cronin, et al., 2000) and even by the inexistence of results that proof that one is an antecedent of the other (McAlexander, et al., 1994).

### *Services Quality in Dental Clinics*

*Marketing perspective:* Grönroos & Masali (1990) raise one of the first models of SQ in the dental sector. However, in the dental clinics the model and favorite scale are SERVQUAL (Baldwin & Amrik, 2003; Carman, 1990; DeMoranville & Bienstock, 2003; Fisher, et al., 1997; Kaldenberg, et al., 1997; Karydis, et al., 2001; McAlexander, et al., 1994; Palihawadana & Barnes, 2004; Ueltschy, et al., 2007). Also, relations between expectations and SQ, prompt service and SQ (responsiveness) has been studied. *Dentist perspective:* the satisfaction of the patient as an indicator of the SQ (Newsome & Wright, 1999a; Newsome & Wright, 1999b) has been examined even as a challenge to the dentist to give a service with quality (Barder, 2009). The technical performance of the dentist is considered the key aspect in SQ.

## **3. Relationship Marketing**

RM arises as an evolution of the traditional marketing concept. In the 1990s researchers conceptualized and proposed factors that until now were incomplete theory. In the 2000s the knowledge with the contribution of new scales of measurement improves, theoretical models y and technological applications, among others. The RM has been dismissed by researchers for not having a link with companies (Fournier, et al., 1998), others by contrast see it as a successful discipline as other areas of marketing (Parvatiyar & Sheth, 1999). The “Relationship Marketing” term was raised for the first time by Leonard L. Berry in 1983 in a paper published by the American Marketing Association’s Services Marketing Conference. “Relationship marketing is attracting, maintaining and--in multi-service organizations--enhancing customer relationships” (Berry, 2002, p. 61). Although other authors have studied the subject previously, for Berry (2002), companies not only must pursue to gain new clients but to maintain them. The RM emerges as a criticism of the traditional marketing (Jackson, 1985). Grönroos (1994) proposes that marketing faces a new paradigm (not only the four P’s):

“Marketing is to establish, maintain, and enhance... relationships with customers and other partners, at a profit, so that the objectives of the parties involved are met. This is achieved by a mutual exchange and fulfilment of promises” (Grönroos, 1994, p. 355).

Some components of RM are established in several research works. *Trust* between clients, partners, providers. When you create trust, you show customers that

they can also be valued as partners (Fournier, et al., 1998). *Segmentation* like tactics that allow classifying the suitable clients (Parvatiyar & Sheth, 1999). *Valuing the best customers and keep them* rather than seeking new customers (Berry, 2002). *Communication* “is defined as the formal, as well as informal, exchanging and sharing of meaningful and timely information between buyers and sellers (Sin, et al., 2005, p. 187). *Bonding* consists of developing customer loyalty, commitment between customer and seller (Gummesson, 1994; Sin, et al., 2005). RM also feeds other areas: Customer Relationship Management (CRM), Customer Loyalty (CL), Loyalty Programs among others has also been studied in order to maintain and improve customer relations.

#### **4. Customer Loyalty**

Customer Loyalty (CL) has been studied from three perspectives: attitudinal, behavioral and a combination of both.

*Attitudinal Loyalty*, favorable attitude toward a brand or purchase intention. It is composed of : *cognitive aspects* that are based on current psychological cognitivim, previous knowledge of brand, brand value (Oliver, 1999; Jacoby & Kyner, 1973), emotional states, humor, feelings (Dick & Basu, 1994), impulses, expectations and switching costs (Nath , 2005) purchase intention (Dall'Olmo R., et al., 1997). *Social aspects*, consumers exhibit loyalty to a brand influenced by the social group to which they belong. Some factors have been studied such as social pressure, social hierarchy (Shouten & McAlexander, 1995) recommendation, social motivation (family, friends, and community) and as a personal effort to be integrated into a community (Oliver, 1999). *Behavioral Loyalty* has been the pioneering approach. In early research, loyalty is studied through the “repeat purchase” paradigm (Ehrenberg, et al., 1990). Other studies measure customer loyalty based on market share, sales, etc. (Uncles, et al., 2003). *Combination of perspectives (attitudinal and behavioral)*: favorable attitude toward a brand and repeat purchase. Baldinger & Robinson (1996) y Uncles et al. (2003) were among the first authors to indicate the importance of measuring loyalty as an attitude and behavior at a time. Other researches refer the multidimensional loyalty (Kuo, et al., 2004).

#### **5. Methodology**

##### *Phase 1 Preview Research and Literature Review*

This study is the extension of an investigation by Gonzalez Serrano, et al. (2007) which analyzed patients and dentists in the dental sector of the Community of Madrid. At the same time, a rigorous revision of the Literature of the SQ, RM and CL areas was realized, obtaining the more robust perspective and elements.

### Phase 2 Conceptual Model Proposed

From the revision of literature, a conceptual model has settled out with the aim of contrasting it empirically in future research. Summarized as follow: *a Relationship Marketing model using information extracted of SERVQUAL, CL and RM activities in dental clinics*. In addition, we look forward to contributing with a current definition of Customer Loyalty provided by dentists of the dental sector.

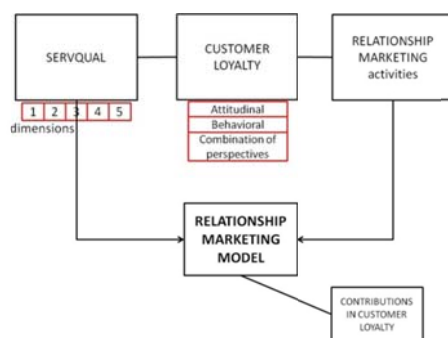


Fig. 1 Conceptual model proposed

### Phase 3 Instrument Pretesting and Data Collection

At the moment, we are at the first stage of the pilot study. This includes the pretest of the surveys. Surveys have been conducted on two groups: dentists and patients. Aspects like readability, reading comprehension and survey's duration have been analyzed. For dentists we have conducted two pretests: from October to December 2011. The topics studied were: how patients evaluate SQ, traditional marketing, communication, costs, RM, segmentation, CL, extra services that could offer clinics and socio-demographic data. In the first pretest, three of the proposed scales were evaluated (reliability analysis). The coefficient  $\alpha$  for the Relationship Marketing, Loyal Patient and Non Loyal Patient were .81, .76, .80 respectively. In the second pretest were .80, .80, .86 respectively. In the survey of patients, we asked about the patient perceptions of SQ (SERVQUAL), traditional marketing, RM, willingness to hire extra services, patient's treatment, visits and socio-demographic data. Reliability analysis of RM, Traditional Marketing and CL will be carried out. Currently we started the first pretest in January 2012.

In the qualitative analysis, both types of surveys have been evaluated by a panel of experts through personal interviews; three dentists and two researchers in marketing, a total of 10 interviews; five for each type of survey. A random sample of 375<sup>3</sup> dentists and 400<sup>4</sup> patients for the final phase of the research will be used.

<sup>3</sup> N=5.921 Dentists in The Region of Madrid (INE, 2010) confidence level  $\pm 95,5\%$  and sampling error  $\pm 5\%$

<sup>4</sup> N=6.489.680 Dentists in The Region of Madrid (INE, 2011) confidence level  $\pm 95,5\%$  and sampling error  $\pm 5\%$

#### *Phase 4 Results Obtained of Pretesting*

Currently the results are very incipient. We analyzed data from the first pilot study completed: the dentists. Dentists perform some intuitively RM actions, but in an unstructured manner. They manage databases but they do not use this tool for the retention of patients, although they value to maintain its better patients. According to the dentist, the loyal patient usually has bonds of friendship with the staff, visits the clinic often, but do not pay more for the visit. They perceive that their patients value “assurance”: knowledge, trust and courtesy of employees and “empathy”: caring, individualized attention the firm provides its customers (Parasunaman, et al., 1988). Dentists are not willing and disagree to make agreements with companies to improve car parking of the clinics, a contradictory issue since, according to them; this is a service highly valued by the patient. Nevertheless, the results are inconclusive; therefore, it is necessary to complete the research with the collected data of the sample of patients and dentists.

#### *Phase 5 Proposed Methodologies*

For the validation of the model the *Fuzzy Logic* methodology will be used. Fuzzy Logic allows to treat the vague information that the human being usually uses (Martín del Río & Sanz M., 2001), such as “I am very satisfied”, “Service quality is moderately...” in terms of fuzzy sets and linguistic rules. These *fuzzy sets* are combined in rules to create a fuzzy inference system, ej. If it is “highly satisfied” then the service quality “is good”. Fuzzy sets theory originated from classical set theory but adds the so called “*membership function*” defined as a real number between 0 and 1 that is associated with a linguistic value defined by a word or linguistic variable. The *linguistic variable* can take the value of natural language terms such as “not much” which are words that play the role of tags in a fuzzy set; however it also can be assigned numerical values. For each fuzzy set it is necessary to define a membership function  $\mu_A(t)$  indicating the degree to which the variable  $t$  is included in the concept represented by the label  $A$ . Eg. For the linguistic variable “quality of service” three fuzzy sets {Good, Average, Poor} could be defined with membership function  $\{\mu_{\text{Good}}(t) \mu_{\text{Average}}(t) \mu_{\text{Poor}}(t)\}$ . Finally, to analyze every situation that may arise, the *fuzzy rules*, which combine one or more fuzzy sets, called antecedents, are associated with the so called consequences. The antecedents are associated with logical conjunctives such as “and”, “or”, etc. for example. If E is good and E is Bad then U is good. But to express all the above analysis requires a rule base, that is, the set of rules that express relationships between the known antecedents and consequences; these are represented by a table of rules.

## **6. Conclusions and Further Research**

Although with very early results, we could mention that the dentist possess databases and has a strong knowledge of the patient’s behavior, making it easy the

implementation of the proposed model. In contrast, they seem to struggle from a conservative perspective with the new requirements of patients (e.g. car parking) and the unwillingness to renew or offer additional services. Nevertheless, it is necessary to complete the research data; this will give us the vision of the two perspectives together: patients and dentists. Finally, in a field where understanding imprecise expressions are part of the feature of the data that we must collect, Fuzzy Logic methodology is the ideal tool that can adapt and quantify the language of respondents, as well as to explore other methodologies that can be used in marketing different from the widely used Statistics. Future studies could extend the model proposed through a cross-cultural validation in different countries. Furthermore, it could be useful to study the dentist's attitude and willingness to renew and/or add services demanded by patients, that also could be carried out with Fuzzy Logic this might add a perspective unknown by the researchers until now.

## 7. References

- Baldinger, A. & Robinson, J., 1996. Brand Loyalty: the link between attitude and behavior. *J of Adv Res*, 36(6), pp. 22-35.
- Baldwin, A. & Amrik, S., 2003. Service quality factors and outcomes in dental care. *Man Serv Qual*, 13(3), pp. 207-216.
- Barder, J. D., 2009. Challenges in quality assessment of dental care. *J Am Dent Ass*, 140, pp. 1456-1464.
- Berry, L. L., 2002. Relationship Marketing of Services-Perspectives from 1983 and 2000. *J of Rel Mark*, 1(1), pp. 59-77.
- Carman, J. M., 1990. Consumer Perceptions of Service Quality: An Assessment of the SERVQUAL Dimensions. *J of Ret*, January, 66(1).
- Cronin, J. J., Brady, M. K. & Hult, G. M., 2000. Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *J of Ret*, 76(2), pp. 193-218.
- Cronin, J. J. & Taylor, S., 1992. Measuring service quality: a reexamination and extension. *J of Mark*, July, 56(3), pp. 55-68.
- Cronin, J. J. & Taylor, S. A., 1994. SERVPERF versus SERVQUAL: Reconciling Performance-Based and Perceptions-Minus-Expectations Measurement of Service Quality. *J of Mark*, January, 58(1), pp. 125-131.
- Dabholkar, P. A., Shepherd, C. D. & Thorpe, D. I., 2000. A comprehensive framework for service quality: an investigation of critical conceptual and measurement issues through a longitudinal study. *J of Ret*, 76(2), pp. 139-173.
- Dabholkar, P., Torpe, D. & Rentz, J., 1996. A measure of service quality for retail stores: scale development and validation. *J of de Ac of Mark Sci*, 24(1), pp. 3-16.
- Dall'Olmo R., F. et al., 1997. The variability of attitudinal repeat-rates.. *Int J of Res in Mark*, Volume 14, pp. 437-450.
- DeMoranville, C. W. & Bienstock, C. C., 2003. Question order effects in measuring service quality. *International J of Res in Mark*, 20(3), pp. 217-231.
- Dick, A. & Basu, K., 1994. Customer Loyalty: toward an integrated conceptual framework. *J of the Acad of Mark Sci*, 22(2), pp. 99-113.
- Ehrenberg, A., Goodhardt, G. & Barwise, T., 1990. Double Jeopardy Revisited. *J of Mark*, 54(Jul), pp. 82-91
- Fisher, E., Gainer, B. & Bristor, J., 1997. The sex of service provider: Does it influence perceptions of service quality?. *J of Ret*, 73(3), pp. 361-382.
- Fournier, S., Dobscha, S. & Glen Mick, D., 1998. Preventing the mature death of Relationship Marketing. *Harv Buss R*, Nov-Dec, pp. 42-51.

- González Serrano, L. et al., 2007. Libro Blanco de la Profesión: Odontólogos y Estomatólogos de la Comunidad de Madrid. Madrid: Universidad Rey Juan Carlos.
- Grönroos, C., 1984. A service quality model and its marketing implications. *Eur J of Mark*, 18(4), pp. 36.
- Grönroos, C., 1994. Quo Vadis Marketing? Toward a Relationship Marketing Paradigm. *J of Mark Man*, 10, pp. 347-360.
- Grönroos, C. & Masali, K., 1990. Motivating your patients: marketing dental services. *Int Dent J*, 40, pp. 18.
- Gummesson, E., 1994. Making Relationship Marketing Operational. *Int J of Ser Ind Man*, 5(5), pp. 5-20.
- INE, 2010. Instituto Nacional de Estadística. [Online] Available at: <http://www.ine.es/jaxi/tabla.do> [Accessed 28 Jan 2012].
- INE, 2011. Instituto Nacional de Estadística. [Online] Available at: <http://www.ine.es/jaxi/tabla.do> [Accessed 28 Jan 2012].
- Jackson, B., 1985. Build Customer Relationships Last. *Har Bus R*, Nov-Dec(120-128).
- Jacoby, J. & Kyner, D., 1973. Brand loyalty vs. repeat purchasing behavior. *J Mark Res*, X(Feb), pp. 1-9.
- Kaldenberg, D., Becker, B. W., Browne, B. & Browne, W. G., 1997. Identifying Service Quality Strengths and Weaknesses Using SERVQUAL: A Study of Dental Services. 15(2), pp. 69-86.
- Karydis, A., Komboli-Kodovazeniti, M., Hatzigeorgiou, D. & Panis, V., 2001. Expectations and perceptions of Greek patients regarding the quality of dental health care. *Int J for Qual in Health Care*, 13(5), pp. 409-416.
- Kuo, T., Chang, C. & Cheng, K., 2004. Exploration of consumer loyalty in recreational sport/fitness programs. 7(Winter 1), pp. 89-108.
- McAlexander, J. H., Kaldenburg, D. O. & Koenig, H. F., 1994. *Serv Qual Meas. Journal of Health Care Marketing*, 14(3), pp. 34-40.
- Nath, S., 2005. Loyalty Programs-Beyond Behavioral Loyalty-Hypothesis of the psychological working of loyalty programs.. [Online] Available at: <http://www.thema.org/PublicUploads/224862LoyaltyPrograms2006.pdf> [Accessed 28 January 2011].
- Newsome, P. & Wright, G., 1999a. A review of patient satisfaction: 1. Concepts of satisfaction. *British Dental Journal*, 27 February, 186(4), pp. 161-165.
- Newsome, P. & Wright, G., 1999b. A review of patient satisfaction: 2. Dental patient satisfaction: an appraisal of recent literature. *Brit Dent J*, 27 February, 186(4), pp. 166-170.
- Oliver, R., 1999. Whence Consumer Loyalty?. *J of Mark*, 63(Special Issue), pp. 33-34.
- Palihawadana, D. & Barnes, B., 2004. The measurement and management of service quality in dental healthcare. *Health Ser Manag Res*, 17(4), pp. 229-236.
- Parasunaman, A., Zeithaml, V. A. & Berry, L. L., 1988. SERVQUAL: A Multipli-Item scale for measuring consumer perceptions of service quality. *J of Ret*, 64(1), pp. 12-40.
- Parasunaman, A., Zeithaml, V. A. & Berry, L. L., 1991. Refinement and Reassessment of the SERVQUAL Scale. *J of Ret*, 67(4), pp. 420-450.
- Parasunaman, A., Zeithaml, V. A. & Berry, L. L., 1994. Reassessment of expectations as a comparison standard in measuring service quality: implications for further research. *Journal of Marketing*, 58(1), pp. 111-124.
- Parasunaman, A., Zeithaml, V. A. & Berry, L. L., 2000. Alternative scales for measuring service quality: a comparative assessment based on psychometric and diagnostic criteria. *J of Ret*, 70(3), pp. 201-230.
- Parvatiyar, A. & Sheth, J. N., 1999. The Domain and Conceptual foundations of Relationship Marketing. In: *The Handbook of Relationship Marketing*. Thousand Oaks, CA.: Sage Publications.
- Shouten, J. & McAlexander, J., 1995. Subcultures of Consumption: An Ethnography of the New Bikers. *J of Con Res*, 22(June), pp. 43-61.
- Sin, L. Y. et al., 2005. Relationship marketing orientation: scale development and cross-cultural validation. *J of Bus Res*, Issue 58, pp. 185-194.
- Ueltschy, L. C., Laroche, M., Eggert, A. & Bindl, U., 2007. Service quality and satisfaction: an international comparison of professional services perceptions. 21(6), pp. 410-423.
- Uncles, M., Dowling, G. & Hammond, K., 2003. Customer Loyalty and customer loyalty programs. *Journal of Consumer Marketing*, 20(4), pp. 294-316.