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# Development And Validation of A Customer Relationship Scale For Airline Companies

ORIGINAL ARTICLE

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## ABSTRACT

Businesses with focus on customers through the use of Customer Relationship Management (CRM) perform better and win customer loyalty. Therefore, it is relevant to study the relationship between customers and airline companies, given that the aviation industry is highly competitive and relatively commoditized. Thus the aim of this study was to develop and validate a scale to measure customer's perception of relationship with airline companies. The scale was composed of four primary factors (customer loyalty, purchase experience, flight experience, and service) and a second order factor (customer relationship), all with good psychometric indices. The development and validation of a scale in an industry little explored by the CRM literature was the main contribution of this research, as it may be used as a diagnostic tool for airline companies to scale up their relationship with strategic customers and achieve more effective results.

**Keywords:** Customer relationship management; Airlines; Scale development and validation; Hierarchical factor analysis.

## 1. INTRODUCTION

Competition is a catalyst for pursuing excellence in business strategies, since it reflects directly in the business scenario by promoting consumption alternatives to an increasingly demanding market. According to Porter (1991), the competitive advantage is the result of the organization's ability to perform efficiently the set of activities necessary to obtain a lower cost than the competitors or to organize such activities in a unique way capable of generating a differentiated value for the clients. In this context, organizations should strive to offer greater value, either through better service, lower cost or greater quality in providing services to consumers in order to become more profitable and competitive. Relationship marketing is an evolution in the traditional concepts of Marketing when proposing a partnership between company and client, by offering personalized value that culminates in mutual benefits and increased profitability.

More specifically, the strengthening of these relationships between client and company should be studied in sectors where competition is fierce and the quality of the service and knowledge of preferences is a differential. In this context, the Brazilian airline sector, which is the third largest market in the world, with around 92 million domestic

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passengers. Between 2002 and 2013, the sector grew 208% (BRAZILIAN ASSOCIATION AIRLINES [ABEAR], 2016), over 3.7 times the growth of the Brazilian gross domestic product (GDP) and more than 13 times the population growth, according to the National Civil Aviation Agency (*Agência Nacional de Aviação Civil*, 2014). However, the financial crisis that plagued the country since 2014 has produced its unfortunate effects also in civil aviation. Recent information published by the Brazilian Airlines Association (ABEAR, 2016), data from June 2016, show a 7% decrease in transported passengers, 6.4% of supply decline and 5.9% fall in demand. The loss in the sector is estimated at 10 billion BRL from 2014 till the end of 2016 (DECEA, 2016).

Added to these statistics is the fact that passengers are increasingly dissatisfied with the services provided by airlines (CRAVO, 2014). Multiple problems are identified in the sector, such as flight delays and cancellations, faults in information provided to passengers, security breaches, among others. There is a lack of alternative in view of the insufficient rivalry to challenge dominant companies in airports.

Therefore, it is relevant to seek means and tools that help in the understanding of passengers' assessment of their relationship with airlines. Thus, the objective of this work is to develop and validate a scientific instrument to evaluate the relationship of the clients with the airlines. In addition, the perception of the sample surveyed is related to the relationship with airlines and their degree of satisfaction with them.

Understanding airlines as a complex domain of vast business reality, where multiple and diverse interests need to be aligned, a diagnostic tool allows managers to know the passengers' perception of their relationship with them, subsidizing decisions regarding the planning of services, pricing, and communication strategies, with the aim of promoting a better customer experience, which ultimately means, more effective organizational results.

## 2. THEORETICAL FRAMEWORK

Customer Relationship Management (CRM) is a business strategy that proposes managing customer relationships effectively in order to maintain competitiveness (PAYNE, 2012). Aiming at the prosperity of organizations and at optimizing their ability to reinvent themselves, relationships between organizations and clients acquire special connotation and CRM, encompassing aspects of customer satisfaction and loyalty, and especially the constant offer of unique and charming experiences, presents itself as a profitable differential (MISHRA; MISHRA, 2009; KUMARET AL., 2011).

Relationship marketing represents a paradigm shift of marketing concepts, by their greater focus on customer retention and loyalty and not just on the achievement (GRÖNROOS 1994; SHETH; SISODIA, 2002; PAYNE; 2012). In a practical way, it is necessary for the company to have integrated processes, operations and people so that the essence of relationship marketing can be the philosophy that guides the whole business (VAVRA, 1993).

Relationship marketing innovates by presenting a strategic vision of marketing concepts, advocating a shift from marketing orientation to customer acquisition (transactional) to focus on customer retention or loyalty (VAVRA, 1993). The author even suggests three factors as being the key components of the concept of relationship marketing or CRM, namely, quality, customer service and aftermarketing or customer loyalty strategies. In fact, there is a possibility of correlation between satisfaction, loyalty and relationship constructs, with quality, satisfaction and loyalty being possible components of a more comprehensive concept, namely the relationship with the customer (LEVITT, 1990; BOLTON, 1998).

Therefore, it is possible to admit that elements of quality, value, satisfaction and loyalty can be fundamental parts in the construction of a relationship and that, it is difficult for the business-client relationship to last if one of the parties is unhappy or unfaithful or disloyal to the other, as pointed out by LEVITT (1990).

With its emergence in the 1990s, CRM quickly became a patent proposal of relevance. However, understanding what CRM means is still limited. Many companies do not understand CRM as a synonym for relationship marketing and see it as a technological solution, confusing customer relationship management with support systems for CRM implementation (MCKENNA, 1999).

Along the same lines, the empirical study conducted by Bygstad (2003) in a company that implemented CRM both as a marketing principle and as an information system revealed that CRM projects should be treated from a managerial perspective, focusing on marketing processes and the quality of information, with software tools being important for its implementation. These findings converge with the proposal by Zablah, Bellenger and Johnston (2004), by agreeing that the CRM literature is still inconsistent and highly fragmented due to the lack of a common conceptualization. Nevertheless, the authors advocate CRM as an ongoing process that involves developing customer relationships to optimize organizational results.

In Payne's (2012) view, it is true that CRM is a holistic strategic approach to managing customer relationships in order to create shareholder value. The author argues that CRM provides more opportunities for using data and information to understand the customer and better implement relationship marketing strategies, but this does not limit it to an information system or a technological tool. It is also emphasized that the importance of correctly defining CRM is not just a semantic preciosity.

In this context, in order for CRM to be successful, it needs to be imbued with a strategic vision to create shareholder value through the development of strategic customer relationships, linking the potential of information technology (IT) to relationship marketing strategies that will result in establishing long-term profitable relationships (PAYNE, 2012).

Therefore, from the conceptual framework thus designed, emerges the operational definition that will be adopted as reference in the present study, which understands Customer Relationship as a business strategy whose premise is customer focus, which should constitute the business philosophy of the company as a whole and that delivers superior value to customers through the quality of services provided, excellence in service and aftermarketing initiatives that translate into loyalty indicators. The scale proposed here will then evaluate the perception that customers have regarding the CRM initiatives undertaken by airlines (VAVRA, 1993; MCKENNA, 1999; ZABLAH; BELLENGER; JOHNSTON, 2004; PAYNE; STORBACKA; FROW, 2008; PAYNE, 2012).

In an analysis of the relational benefits observed by service users, Mota and Freitas (2008) identified that customers have a positive outlook when they perceive that they get some special treatment, extra discount or priority service. In this sense, Souza Neto and Mello (2009) suggest that each service influences the nature of the relationship of the companies with their consumers in a different way and that it is important to consider that consumers are not all the same and each of them may wish for a different kind of relationship with the same company.

The recent empirical production shows that the implementation of CRM relies on the importance of trust, involvement, teamwork, innovation, flexibility, and focus on results to build a relationship-oriented corporate culture and the key role employees play in building long-lasting customer relationships, which generate greater value to organizations (IGLESIAS; SAUQUET; MONTAÑA, 2011; LOURENÇO; SETTE, 2013; GARRIDO-MORENO; LOCKETT; GARCÍA-MORALES, 2014). In addition, proposals for innovative relationship marketing approaches in the context of e-CRM and social CRM have aroused the authors' interest (LENDEL; VARMUS, 2015).

Regarding CRM scales, some studies with scale validation based mainly on studies by Wilson and Vlosky (1997) and Sin, Tse and Yim (2005), aimed at the corporate market (B2B). Thus, with the intention of filling a gap in the literature regarding CRM measures

for the consumer market (B2C), Rozzett and Demo (2010) conducted studies in Brazil and in the United States (DEMO; ROZZETT, 2013) to develop and validate a scale for the consumer market with the objective of evaluating clients' perceptions of their relationships with companies in general, which shows, ultimately, the clients' perception of the CRM initiatives undertaken by the companies. Some items in the scale by Rozzet and Demo (2010) and Demo and Rozzett (2013) served as the basis for the development of the scale proposed in this study.

Considering that diverse contexts demand specific indicators, from these studies, three custom scales have already been developed and validated in different sectors: amusement parks (VASCONCELOS; DEMO, 2012), electronic games (DEMO; BATELLI; ALBUQUERQUE, 2015) and beverages (DEMO; LOPES, 2014), but we found no study of relationship scales that focused on the commercial airline sector, constituting another gap in the literature.

As for the specific studies on airlines, we found research by Arruda and Arruda (1995) and Vasconcelos, Machado, Almeida, Arruda and Matos (2015). Arruda and Arruda (1995) analyzed the perception of passengers of Brazilian airlines regarding some attributes of the offered services that seemed fundamental for the image of the brand observed, aiming at their improvement and the loyalty of passengers. Overall, passengers positively assessed the attributes of airlines, but claimed that the ticket prices were high. The most frequently mentioned attributes were: loss of luggage, security, damaged luggage and on-board service. The authors recommended that companies improve aspects such as food, speed of baggage release, comfort and assistance with special requests.

In turn, Vasconcelos et al. (2015) analyzed the role of consumer experiences in brand image building, from the identification of the thoughts, feelings and actions resulting from the experiences of consumption with the airlines, and the types of associations that the consumer makes of such brands. The results indicated that thoughts, feelings and actions from consumer experiences become important elements in the image formation of airlines' brands. Consumers primarily use the attributes of the service to build their perceptions about airline brands.

### 3. METHODS

The performed research is classified as instrumental and descriptive, with a field research procedure, multi-method and cross-sectional in nature. To reach the objective, we performed two steps: the first refers to the qualitative study, with a survey of indicators to base the construction of the scale; and the second, the quantitative study, with scientific application and validation of the instrument.

#### 3.1. QUALITATIVE STUDY

In this stage, we conducted interviews with airline employees and users. The number of participants was chosen in order to build a varied and representative group, respecting the criterion of saturation or completeness (BARDIN, 2013). Thus, we interviewed 27 participants, 18 users and nine airline employees chosen for convenience and accessibility. The users were 10 male clients and 8 female clients, with an average age of 32 years ( $\sigma=14$ ). The employees were five women and four men, also with an average age of 32 years ( $\sigma=11$ ). The average length of service in the role was nine years ( $\sigma=12$ ), with an extreme case of an airport agent for 34 years in the role.

Participants received an invitation with detailed research and signed a consent and authorization. The interview was unstructured and directed, with two questions, one for employees and managers and the other for users, respectively: 1) "What aspects do you consider relevant to develop a good relationship with your customers considering satisfaction

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and loyalty?"; 2) "What aspects do you consider relevant to develop a good relationship with airlines, considering their satisfaction and loyalty?". Before the questions, we clarified to the respondents that the concept of relationship adopted was that by Vavra (1993), with its three dimensions.

Next, we performed a thematic content analysis (BARDIN, 2013).

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### 3.2. QUANTITATIVE STUDY

In the second step, we created scale items based on the results of the interviews conducted and on the Customer Relationship Scale (CRS), validated in Brazil (ROZZETT; DEMO, 2010) and in the United States (DEMO; ROZZETT, 2013).

The pilot instrument was submitted to semantic analysis, as recommended by Kerlinger and Lee (2008), in which 23 airline users have compared the clarification of the items. We also submitted to the judge analyzes, in which eight experts on the subject analyzed whether the proposed items referred to the relationship construct and were appropriate for consumers of the airline services.

The instrument was applied online through Typeform for airline customers who travel at least once a year and are over 18 years of age. In total, we collected 512 questionnaires.

We used non-probabilistic sampling for convenience due to the infinity tendency of the passenger population of airlines (COCHRAN, 1977) and the cost and time of the research. We observed the criteria by Pasquali (2012) and Tabachnick and Fidell (2013) for research with multivariate data analysis, of at least 200 to 300 subjects or 5 to 10 cases per item of the instrument. We applied 512 questionnaires on a scale of 54 items, thus meeting all criteria.

The data were analyzed through descriptive measures and Exploratory Factor Analysis using the Statistical Package for Social Sciences program (SPSS, version 22).

Prior to the analyzes, we performed the data coherence inspection and treated the lacking and missing cases. We used the listwise procedure for missing data and the Mahalanobis distance method for extreme data (TABACHNICK; FIDELL, 2013). At the end of this stage 93 questionnaires were removed.

Regarding the assumptions for the use of multivariate analysis, we verified the existence of normality, homoscedasticity and linearity, as well as multicollinearity and singularity (HAIR; BLACK; BABIN; TATHAM, 2009). The data returned acceptable values for the standards proposed by Hair et al. (2009).

Finally, the sample had 419 subjects, who met the statistical criteria for sample determination and even exceeded the minimum necessary to have representativeness in populations considered as infinite.

The 419 subjects who composed the final sample were from 18 Brazilian states (29%) and from Distrito Federal (71%), distributed evenly according to genre (50.2% of men and 49.8% of women), aged between 18 and 28 years old (75%) and complete higher education (51%).

The company most evaluated was TAM (41.9%), followed by GOL (36.6%), Azul (12%) and Avianca (6.0%). Air France, American Airlines, Delta Airlines, Copa Airlines, Easyjet and Jal totaled 3.6% of the above companies.

Almost half of the respondents have been clients of the company chosen between one and five years ago (48%). Only 5% of the sample has been a client for less than a year, which is favorable for the results, since clients with greater time of relationship may be more apt to make judgments on the attributes of the good or service offered.



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## 4. RESULTS AND DISCUSSION

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The interviews were transcribed and the data were then analyzed and classified into themes, which were counted according to their frequency. These themes comprised categories of analysis and based the creation of the items for the questionnaire which was applied in the quantitative stage. Table 1 summarizes the content analysis.

From the scales by Rozzett and Demo (2010) and Demo and Rozzett (2013) and after the content analysis, the items of the questionnaire were created, based on the themes and categories found, which were submitted to theoretical validation – semantic and judge analysis – as recommended by Kerlinger and Lee (2008).

The semantic analysis had the participation of 23 respondents of varied profile in order to evaluate the clarity of the items and reduce possible doubts in the application of the research. Simultaneously, an analyzes by judges with eight specialists in the subject was conducted, among masters, doctoral students and doctors, with the objective of conferring the pertinence of the items in relation to the theoretical concepts.

Initially, the questionnaire had 61 items on client-company relationship and six socio-demographic questions. At the end of the theoretical validation, 12 items were excluded, eight modified and five added by evaluators' suggestions. The application version counted 54 items evaluated by the Likert scale, six socio-demographic questions and one item to measure customer satisfaction with the company, according to the Net Promoter Score.

After applying the questionnaires and data treatment, we carried out an analysis of the main components to verify the factorability of the matrix, adequacy of the sample and determination of the quantity of factors.

The inspection of the correlation matrix, the values of commonality (the majority above 0.6) and the Kaiser-Meyer-Olkin index (KMO) of 0.94 indicated high matrix factorization (KAISER, 1974).

In order to identify the number of factors of the instrument, we used eigenvalues as a choice criteria above 1.0, the percentage of explained variance greater than 3%, the inflection point in the screeplot graph and the parallel analysis. The eigenvalues indicated 10 factors and that of the total variance five, while the visual analysis of the screeplot indicated six factors. On the other hand, the parallel analysis, considered the most reliable for the determination of the quantity of factors (HAYTON; ALLEN; SCARPELLO, 2004), indicated five. However, in theoretical terms, there was no support for the existence of five factors and we decided, therefore, to establish the analysis in four factors.

Then, we performed an analysis of the main axes with oblique promax rotation and minimum acceptable loading of 0.45 (PASQUALI, 2012; TABACHNICK; FIDELL, 2013).

The high correlation between the factors (above 0.3) suggested the possibility of second order factors (PASQUALI, 2012). Thus, the four factors extracted were resized as latent indicators of a second order general factor and a new analysis of main components was performed, pointing to a factor, as expected.

The scale resulted in four first-order factors, termed as "Purchasing Experience", "Flight Experience", "Customer Loyalty" and "Customer Service", consistent with the content analysis and proposed theory, and a general second-order factor called "Customer Relationship", formed by the four first order factors identified.

Table 2 shows the first order factors and their factor loadings in the second order factor. The Customer Loyalty factor can be considered the best representative or the most central

**Table 1.** Result of content analysis

Verbalization of relevant aspects	Theme	Category	Frequency
"I think that firstly I would define price, without a doubt, price and payment terms, if it can be divided into installments, and how many payments"	Payment		15 (56%)
"Today the price is enough, the cheaper the ticket, for me the better."			
"also the cost-benefit ratio, buying at a good value and traveling at good hours"	Time options	Purchasing Experience	4 (15%)
"The first thing I look for in an airline is the price and availability of flights made clear, to the destination I want and at the times I want"			
"you'll end up in a company that meets your schedule needs"			
"but also, issues of ease in buying the ticket over the internet"	Purchase Facility		4 (15%)
"Ease when buying the ticket on the internet, because I only bought on the internet, for years"			
"Well, to my satisfaction, I think it's meeting the scheduling of airlines"	Punctuality		12 (44%)
"I think it's important to be punctual"			
"You arrive at the airport and you can check in quickly"	Agility at check-in		7 (26%)
"the fact that people can check in by cell phone"			
"provide check-in conditions"			
"I think the stools are too tight"	Convenience		8 (30%)
"Comfort while traveling is also very important"			
"The main items, attributes that I can cite, is convenience and service"			
"to provide security and luggage control"	Due care with baggage integrity	Travel experience	3 (11%)
"due care with luggage integrity"			
"the main thing is they do the basics that they have to do right, which is not to lose my luggage, my luggage has already been lost countless times"			
"for the air conditioner to be working in the cabin so one does not get sweaty"	Good Infrastructure		7 (26%)
I think that the main point of any airline is to ensure safety"			
"on-board service in a differentiated way because it can retain customer loyalty"	On board service		3 (11%)
"when you ask for something, now that it is paid, that the food is served hot and the drink cold"			
"and the training of people to solve small or large problems"	Ability to Solve Problems	Customer service	11 (41%)
"I had a reservation next to a window mark and I got there and they only had corridor seats and it was an international trip, so it was very unpleasant"			
"When there are atypical situations that are not well solved by the companies, then these companies end up losing credibility"			
"Customer service, I think it is primal from the moment we enter the airport, right?"	Good customer service		24 (89%)
"Good service and empathy, we have to put ourselves in the customer's shoes when we are working."			
"But above all, what companies are prioritizing is good service."			



"And for loyalty, perhaps there is a flexibility of the airline with regard to rescheduling flights, greater ease for the customer. Today we have a lot of bureaucracy and high fees, right? There are several things to be done and everything one has to do needs to be paid for."	Ease of res-scheduling tickets	5 (19%)
"If I had to add one more point, they would be ways of loyalty, non-loyalty, ways of taking care of customers, for example: ease for rescheduling tickets."		Customer loyalty
"It is obvious that there are extras things, which is a loyalty program"		
"Also having a loyalty program that is very advantageous for the most frequent customer."	Loyalty Programs	6 (22%)
"The only thing I also take into consideration are the loyalty programs right?" Accumulating miles, scoring."		

element of the construct underlying the general factor Customer Relationship, with 0.861 loading, and the factor Purchasing Experience would be the most peripheral element of the construct with loading of 0.481.

According to Laros and Puente-Palacios (2004), the investigation of the presence of second order factors, based on the hierarchical factor analyzes, contributes to the understanding of the factorial structure of the scales allowing the theoretical development of the fields investigated by offering additional subsidies on the central and peripheral constituent elements of the constructs under study. We also evaluated the psychometric indexes of the scale in relation to item quality, reliability and total variance explained (HAIR ET AL., 2009).

The final version of the first-order solution from the Airline Customer Relationship Scale (CRS Airlines), after four iterations, was made up of 33 items: eight excellent, four very good, five good and 16 reasonable, according to the classification proposed by Comrey and Lee (1992). As for the second order solution, the customer relationship factor, after 11 iterations, was formed by four items: one reasonable, two very good and one excellent.

The degree of reliability of the scale (Cronbach's alpha) for the first-order factors and for the second-order factor was calculated and considered reliable (above 0.70) or very reliable (above 0.80), as shown in Table 3 (NUNNALLY; BERNSTEIN, 1994).

In addition, the first-order factors explained 44.6% of the construct variance, whereas the single factor of second order explained 59.4% of the variance. According to Hair et al (2009), variances explained around 50% represent good factor solutions. Table 4 presents the items of the first order solution of the CRS of the Airlines with their respective factor loadings.

Notwithstanding the Airline CSR revealing good psychometric indexes, it is fundamental to verify its theoretical consistency to the construct "relationship perception", which, from the conceptual framework originating from Vavra (1993) and adopted in this study, should have dimensions similar to the quality of services, customer service and customer loyalty strategies.

**Table 2.** First order factors and their loadings on the second order factor

Factor	Content	Loadings
1	Customer Loyalty	0.861
4	Customer Service	0.685
3	Flight experience	0.680
2	Purchasing experience	0.481

In a synthesized way, we can fit the factors “purchasing experience” (factor 2) and “flight experience” (factor 3) in a key element of “quality of the experience”, because they measure the perception of customers as to the quality of services, information and ticket purchase options, as well as the provision of on-board services. According to Gupta and Vajic (2000), the service experience occurs when a consumer has some sensation or acquisition of knowledge resulting from a level of interaction with different elements of a context created by a service provider. In this context, aspects such as convenience and price are relevant (MOTA; FREITAS, 2008), which were also quite cited in the content analysis of the interviews conducted. They are the result of interactions between “the organization, its related systems/processes, its employees and consumers” (BITNER ET AL., 1997, p. 193). The emotional state of respondents, as a result of their interaction with the service attributes present in the experience, tends to influence their future purchasing behavior, giving evidence of the relationship between brand image and their preference (VASCONCELOS ET AL., 2015). These items had already been highlighted by Arruda and Arruda (1995), in a context different from the current one, but with similar items, such as “luggage loss”, “damaged luggage”, “speed of baggage release”, “on-board service”, “temperature/humidity inside the aircraft”, “covers and pillows”, “comfort” and “food”. In the research by Vasconcelos et al. (2015), the interviewees used on-board services, service and punctuality of the flight as characteristics of the quality of services.

The factor “Customer Loyalty” (factor 1) presented items related to trust, identification with the brand, exceeding expectations, attitude and recommendation, which are relevant to the construction of a client’s commitment to the company. According to Oliver (1999), loyalty is a deep-rooted commitment, associated with repeating purchases or a preference for a product or service over time, even if situational influences and efforts of competitors have the potential to cause exchange behavior. In this way, the development of strategies, programs and actions for the strengthening of loyalty is relevant.

The factor “Customer service” (factor 4) presented items that relate to the general presentation of the company (appearance), security and training of frontline employees. In this sense, employee training and commitment are highly relevant to the successful CRM implementation in a company (GARRIDO-MORENO; LOCKETT; GARCÍA-MORALES, 2014). The items such as “cleanliness of toilets”, “security”, “courtesy”, “credibility” and “accurate answer to doubts” were relevant attributes for the satisfaction with airlines in the study by Arruda and Arruda (1995) and after twenty years are still of utmost importance to generate in the customer confidence to develop relationship with the company.

Although the item “I recommend this company to friends and family” being part of the factor “Customer loyalty”, we added a question in the questionnaire in order to assess, from 0 to 10, the likelihood of recommendation, according to the Net Promoter Score (NPS) (Reichheld, 2006). According to the author, the predisposition of a client to recommend the company, product or service is a consequence of the treatment that it receives when in contact with the front-line employees of the company. The higher the NPS, the greater

**Table 3.** Coefficients alpha ( $\alpha$ ) and number of items for the extracted factors

Factor	Coefficient $\alpha$	Number of items
Customer Loyalty	0.92	11
Purchasing experience	0.82	11
Flight experience	0.84	8
Customer Service	0.76	3
Relationship with customers	0.76	4

**Table 4.** Description of the items and factor loadings of the first order solution

Description	First Order Factor Loading				Quality
	1	2	3	4	
1- This company deserves my trust.	0.865				Excellent
2- I recommend this company to friends and family.	0.848				Excellent
3- I feel like an important customer for this company.	0.831				Excellent
5- I identify myself with this company/brand.	0.789				Excellent
15- I have a positive image of this company.	0.741				Excellent
6- This company treats me with respect.	0.726				Excellent
4- My travel experiences with this company exceed my expectations.	0.699				Very Good
16- The advertising made by this company matches what it actually offers.	0.601				Good
7- This company offers me personalized service.	0.532				Reasonable
27- This company is the best option compared to its competitors in the market.	0.521				Reasonable
10- This company seeks to know my preferences.	0.468				Reasonable
50- This company provides ticket/aerial miles promotions.		0.652			Very Good
51- This company communicates with its customers (e-mail, text message on mobile phone, mail).		0.632			Very Good
22- This company uses different customer service channels such as face-to-face, telephone and internet.		0.605			Good
40- This company is part of a group of partner airlines, offering passengers the option of flying to various destinations.		0.596			Good
20- This company offers convenience to customers through various check-in options (totems, applications, website, counter).		0.554			Good
38- This company offers different time options for the same destination.		0.539			Reasonable
29- This company offers benefits for loyal customers (e.g.: advance boarding, priority check-in, VIP room).		0.522			Reasonable
41- This company has partnerships with other (e.g.: hotels, car rental, insurance companies) to provide travel convenience to customers.		0.493			Reasonable
48- This company offers customers several options of ticket payment.		0.467			Reasonable
19- This company's website meets my needs.		0.466			Reasonable
13- This company offers differentiated rates by seat and/or class.		0.450			Reasonable
36- The company's aircraft feature individual on-board entertainment options (per seat).			0.831		Excellent
35- The aircrafts of this company have good entertainment options on board.			0.755		Excellent
42- Meals/snacks served on board are of high quality.			0.619		Very Good
34- I feel comfortable in this company's aircraft (space, armchairs, cleaning, lighting, temperature).			0.560		Good

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	32- This company has clear procedures of luggage re- turn in case of luggage loss.	0.547				Reasonable
	52- This company offers small gifts to delight custo- mers (children's kit, jellybeans, headphones, birthday cards).	0.519				Reasonable
	31- This company cares about the integrity of my lug- gage.	0.502				Reasonable
	43- There is variety in the food/beverage options on board, even if they are not free.	0.476				Reasonable
	45- Overall, this company has a good appearance (em- ployees, aircraft, service counters).	0.547				Reasonable
	46- The crews/pilots of the company's flights transmit safety to passengers, providing information during fli- ghts.	0.535				Reasonable
	47- This company's employees (on ground or on board) appear to be well-trained to serve customers.	0.460				Reasonable
	Reliability	0.92	0.82	0.84	0.76	
	Total Variance Explained					44.60%

the chance that the customer is developing a high degree of satisfaction with the company. In the research by Arruda and Arruda (1995), recommending the airline was positive and strongly correlated with credibility, accurate response to doubts, understanding of needs, assistance with special requests, prompt response to questions and courtesy.

The index for airlines in general was 13%, with a positive emphasis for Azul (82%) and Avianca (78%) that reached similar NPS to Costco (79%), company with the highest NPS in the United States in 2014, according to the Satmetrix research (DANSON, 2015). TAM (today known as LATAM) presented NPS with a common index of 10%, and GOL, the second most cited company in the research, presented a NPS of -33%, indicating that there are more detractors than promoters among the GOL surveyed passengers.

In order to obtain an overview of customer perception, the items were analyzed through descriptive measures of central tendency and relative frequency of response. In relation to the Customer Loyalty Factor, the worst performing items were "This company seeks to know my preferences", "This company offers me personalized service" and "I feel like an important customer for this company".

According to Peppers, Rogers and Dorf (1999), the company can, in general, differentiate customers in two ways: by the levels of value they represent and by their distinct needs. From the identification of clients through variables related to habits, preferences, customs and personality, the differentiation of the client helps the company to gain greater advantage with its most valuable clients, as well as customize the behavior of the company for each client in order to reflect their values and needs. Consistently, Arruda and Arruda (1995, p. 32) found that "credibility and understanding of the needs are the attributes most taken into consideration by the passengers in the perception of quality of service".

Furthermore, the item "my travel experiences with this company exceed my expectations" also had weaker performance, indicating situations of positive customer disconfirmation. In this sense, it should be mentioned that, if the service is personalized, expectations can be met not only when the company offers exceptional service, but when it recovers a service. In this sense, Vasconcelos et al. (2015) found that experiences motivated by flight cancellations can also generate positive thoughts and pleasant feelings if the company goes beyond standard procedures.

Concerning the perception of customers regarding “Purchasing Experience”, we found that companies offer similar benefits, with ticket/aerial miles promotions, several options for check-in and different service channels. However, the item on partnerships with other establishments presented a weaker performance, close to point 3, of indifference to the item. This may be an unknown aspect of customers and should be better communicated by airlines.

Regarding the “Flight Experience”, the item with the best evaluation was “I feel comfortable in the aircraft of this company (space, seats, cleaning, lighting, temperature)”. The item with the worst evaluation was “The company’s aircraft feature individual on-board entertainment options (per seat)”, which may have its low performance attributed to the characteristic of the sample, which responded to the survey considering domestic flights, which usually do not have individualized options.

According to Vasconcelos et al. (2015), the generation of positive or negative feeling is influenced by the experiences of buying and consuming, for example, due to the good quality of the on-board services offered by the company.

On the perception of customers regarding factor 4 “Customer service”, the item with the highest evaluation was “Overall, this company has a good appearance (employees, aircraft, service counters)”, and this suggests that the company’s points of contact with the customer receive attention from the airlines. On the other hand, although item “The employees of this company (on-land or on-board) seem to be well-trained to serve customers” to be well evaluated, among the items of the care factor, was the one that received the worst evaluation, revealing that there may still be room for investment in the training of attendants in order to serve passengers in an increasingly excellent way.

In general, the results obtained outline a diagnosis of the perception that airline customers have regarding CRM initiatives. Highlights can assist in the design and implementation of market differentiation strategies that have a positive impact on establishing long-term customer relationships. In addition, the critical points require special attention on the part of managers in times of escalating competition.

## 5. FINAL CONSIDERATIONS

The present study had as its main objective the development and validation of a relationship scale with airline customers. The results gathered revealed that customers perceive CRM initiatives by airlines. Nevertheless, there are aspects that can be improved, such as knowledge of customer preferences, partnerships with other establishments and individualized on-board entertainment options.

O The instrument created was the Customer Relationship Scale airlines, composed of four first order factors, consistent with the literature and content analysis (customer loyalty, purchasing experience, flight experience and customer service) and a general second-order factor (client relationship), all with good psychometric indexes.

The main contribution of this study is the development of a valid and reliable operational measure, thus filling a gap in the literature regarding relationship marketing research in the B2C market, specifically in the civil aviation sector. In practical terms, the CRS Airlines can be used as a diagnostic tool for airline managers, since the results are able to reveal the perception of the clients regarding the CRM initiatives in the sector under study.

Regarding the limitations of the research, the cross-sectional nature of the study stands out, and the results obtained are specific to the sample and the moment of search, without the possibility of generalization. The online questionnaire was limited regarding its dissemination to the social networks of the researcher’s contact. Furthermore, the proposed relationship scale with airline customers represents a first attempt to obtain a structure



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for this market, which must be confirmed later. Thus, the results are more indicative than conclusive.

For future research, we suggest validating this scale in different and more representative samples in terms of airlines that offer domestic flights and also with companies that offer international flights, with the purpose of increasing its external validity in terms of generalization and replicability. Discriminant analyzes of the relationship concept and its dimensions (quality, value, loyalty, satisfaction) are also welcome. Future CRS airline validations are recommended based on recent research that addresses new CRM trends, perspectives and changes in the airline business environment. Longitudinal studies can also provide a better refinement of the scale, by means of addition, modification and/or exclusion of items. In addition, testing the structure obtained so far through structural equation modeling is important to confirm the hierarchical exploratory model.

Considering the growing attention that researchers have given to the strategic role of CRM in organizations in competitive contexts, the present study offers a valid and reliable operational measure, tailored to the airline industry that can help managers improve their customer relationships and, ultimately, optimize organizational results.

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