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QUALITY OF BANKING SERVICE OVER THE COUNTER IN COYUCA DE BENÍTEZ

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Abstract: The objective of this study was to compare the quality of the Banking service over the counter in Coyuca de Benítez. A quantitative, cross-sectional and quasi-experimental investigation was carried out. The target population is the 648 people who go to the bank on a fortnightly day. A stratified sampling was carried out with proportional assignment to the number of clients in each box. The sample size was 152 clients, of which 68 were in window 1; 46 in window 2; 33 in window 4; 4 in customer service and 4 in the sales window. Through the ANOVA, a significant difference in reliability was found, the windows that differ are window 1 and 2 with the customer service window, so it is concluded that the customer service window does not offer a good Quality of Service as the other windows.
Keywords: Karatepe Model, Quality of Service in Banks, ANOVA, Tukey,

INTRODUCTION

In Mexico, commercial banks are criticized because they do not increase the volume of credit they grant to society. this increases as a result of low economic growth in the last two decades (Chavarín, 2015). In addition, they have to compete in a market where they have to differentiate their services from other banks. That is why they have to work well, because they have to offer a good Quality of Banking Service and have a high competitiveness to satisfy and achieve the loyalty of their customers (Hernandez, 2015). Hence the importance that must be given to Service Quality Models, which will help to evaluate the Quality of Service offered by banks.

Currently, there are the first generation Models of Service Quality by Experience Management, highlighted by Grönroos (1990), Parasuraman, Zeithaml & Berrry (1990), Cronin and Taylor (1994), which are the ones that have set the standard in studies in service organizations in recent years (Torres & Luna, 2016). There are also second-generation Models of Service Quality by Experience Management, where the following stand out: DINESERV (for restaurants), LODGESERV (for hotels), Lodgin Quality Index (for the accommodation industry), AIRQUAL (for airline passengers), GIQUAL (for insurance companies), Retail Service Quality Scale (for retail trade), INDSERV (for final consumers), INTSERQUAL (for internal service), which are being used more,

Berdugo et al (2016), cites the Service Quality Models for banks, such as: Mersha and Adlalha Model (1992), Ennew et al (1993) Model, Avkiran Model (1994), Blanchard and Galloway Model (1994), Johnston Model (1997), Joseph et al Model (1999-1994), Bahia and Nante Model (2000), Sureshchandar et al Model (2001) (Berdugo-Correa, Barbosa-Correa & Prada-Angarita, 2016), which change in the number of dimensions and items. Trujillo et al (2011) also mention other Models that measure Banking Service Quality, such as the proposals by Aldlaigan and Buttle (2002), with four dimensions (service quality system, behavior towards service quality, machinery involved in the quality of service, accuracy in transactions), Sureshchandar (2002), with five dimensions.

With the implementation of these Models, there are studies carried out in Brazil by Duarte et al (2010), which found that there are determinant factors for customer satisfaction in banks, such as officials with good skills, where they offer services correctly the first time. time, cheap bank rates, transparency and loyalty in negotiations and the service of officials who offer fast and agile services. (Duarte, Oliveira & Cannarozzo, 2010).

In studies carried out in Iran, Pourmahammad et al (2015), discovered that the most important factors of Quality in the

bank is the agility of response, followed by the quality system of the process, behavior, competencies and abilities, together with the electronic systems (Pourmohammad, Zandieh, & Farsijani, 2016). Also Carvajal, et al 2013, in Santiago de Chile, found that the determining factors in the perception of the image and quality of the service and its effects on customers, were the attention of the staff and web efficiency, are the ones that most influence the Image, both in the perceived quality, and the image have a considerable impact on customer satisfaction (Carbaja, Leguina & Espinoza, 2013).

González (2015) in Santiago de Cuba, in a study of the evaluation of the Quality of the Service in banking entities with the SERVQUAL model, found and identified the gaps of dissatisfaction in the quality of service from the perceptions of the clients, not exceeds expectations, being the time of service those that obtained the lowest qualifications (González, 2015). In Mexico, in the Isthmus of Tehuantepec, Oaxaca, Torres & Luna, (2016), carried out a study in the four main cities of the place, with the two main banks in the country (BANCOMER and BANAMEX), applying the SERVPEF Model, they found that they had good ratings, BANAMEX 9.2 and BANCOMER 8.9. Showing up in Juchitlán and Salina Cruz with ratings below 9, in the public service system. Regarding the other dimensions, They present good qualifications in the tangible dimensions (cleanliness), security and empathy. But they do emphasize improving reliability and responsiveness. (Torres & Luna, 2016). In the state of Guerrero, the banks that offer their services are: BANAMEX, BANCOMER, BANORTE, SCOTCH BANK, HBS, INBURSA, SATANDER, whose Quality of Service they offer is unknown. Therefore, this study is aimed at comparing the Quality of Banking Service that they offer and knowing the results, strategies will be proposed to improve customer satisfaction and loyalty. BANAMEX, BANCOMER, BANORTE, SCOTCH BANK, HBS, INBURSA, SATANDER, which do not know the Quality of Service they offer. Therefore, this study is aimed at comparing the Quality of Banking Service that they offer and knowing the results, strategies will be proposed to improve customer satisfaction and loyalty. BANAMEX, BANCOMER, BANORTE, SCOTCH BANK, HBS, INBURSA, SATANDER, which do not know the Quality of Service they offer. Therefore, this study is aimed at comparing the Quality of Banking Service that they offer and knowing the results, strategies will be proposed to improve customer satisfaction and loyalty.

METHOD DESCRIPTION

An investigation with a quantitative approach, non-experimental design, transversal temporality and quasi-experimental design was carried out. Where the dependent variables were those proposed by the Karatepe et al (2005) Model, which are: Reliability, Interaction Quality, Empathy and Service Environment, which are specific for banks, with the variant of the SERVPEF Model, which only measures the customer perception. The independent variable is the number of windows.

The evaluation of the four dimensions is carried out as follows:

Service environment: The comfort of the waiting chairs during the service, the cleanliness of the facilities, the internal temperature inside the bank and the appearance of the workers.

Reliability: The security in their transactions in the service of this bank, the promises that the employees made to do so in a certain time and they were fulfilled, if the employees show interest in solving the client's problems,

evaluation of the service that they received the first time when you visited this bank, Rate the service you receive at the entrance of the bank, security assessment inside the bank, security assessment outside the bank and the security you feel about the information you receive from bank employees.

Interaction quality: Evaluates the speed of service that employees provide, the willingness of employees to answer customer questions, and the trust that employees convey to the customer.

Empathy: Evaluates the understanding of the employees about your specific needs, the concern of the employees for the customer, the personalized service that the bank offers, the hours of service that the bank offers.

What rating do you give to the service received? and evaluates the friendliness of the staff who deliver the shifts.

To evaluate each dimension, it was carried out using the averages of the qualifications granted by the clients in each item of each dimension.

The population analyzed is the 648 people who go to the Banamex bank in Coyuca de Benítez, Guerrero in a fortnight, for some service. A stratified sampling was carried out with proportional assignment to the number of clients in each box. Where the sample size was calculated with the following formula:

$$n = \frac{\sum_{i=1}^{L} N^2 p_i q_i / w_i}{N^2 D + \sum_{i=1}^{L} N_i p_i q_i}$$

$$n_i = n\left(\frac{N_i\sqrt{(p_i q_i / c_i)}}{\sum_{k=1}^{L} N_k\sqrt{(p_k q_k / c_k)}}\right) = n w_i$$

(Scheafer, Mendenhall, & Ott, 1987)

Therefore, to calculate the sample size, N = 648, p = 0.5, B = 0.04, Z = 1.96, and the sample size was: n ≥ 151.49

Table 1 shows the amount required in each window of the Bank, in which a pilot sampling was carried out to obtain the probabilities of each window and thus calculate the sample size in each of them. The data collection technique was through the survey, written and direct, systematic in the selection of clients, randomly taking the first client and then the questionnaire was applied to every 5 clients. The instrument that was used is a questionnaire, designed to evaluate the quality of the banking service.

Table 2 shows the structure of the analysis of variance (ANOVA), which was used to identify if the quality of the service offered at each window is the same. If the ANOVA is significant, to identify the windows that differ, it was performed using Tukey's multiple comparisons.

The intent is to compare each treatment mean to each of the other means using pairwise comparisons. The parameters of interest are all pairwise differences between the treatment means, μi − μj, for all i # j, which result in t(t − 1)/2 comparisons. Often these methods are applied in order to detect significant inequalities, μi − μj, for all i # j. The Tukey procedure For pairwise comparisons of all treatment means, it is used to construct confidence intervals of **100(1-α)**%, so you have to:

$$q = \frac{\bar{y}(\text{mayor}) - \bar{y}(\text{menor})}{\sqrt{\frac{S^2}{r}}}$$

(Kuehl, 2000)

where ŷ(mayor)is the largest mean of an ordered group of means in an experiment and ŷ(menor)it is the smallest. The difference or separation is divided by the standard error of the treatment mean, where the name of the standardized (Student's) statistic is derived.

For a group of k treatment means, the honestly significant difference is calculated as:

$$DHS(k, \alpha_E) = q_{\alpha,k,v}\sqrt{\frac{S^2}{r}}$$

where $q_{\alpha,k,v}$ is the standardized Student's

	Neither	pi	piqi	nipiqi	neither	
window 1	257	0.39660494	0.23930946	61.5025315	67.1973436	68
window 2	187	0.28858025	0.20530169	38.3914157	45.2873506	46
Window 4	146	0.22530864	0.17454466	25.48352	32.6020706	33
Customer service	30	0.0462963	0.04415295	1.32458848	3.36930372	4
Sales	28	0.04320988	0.04134278	1.15759793	3.04296483	4
Total	648			127.8597		155

Table 1: Sample required at each window

source of variation	Sum of squares	Degrees of freedom	mean squares	F
between groups	$(I-1)S_b^2 = SC(A)$	I-1	$S_b^2 = CM(A)$	CM(A)
intra-groups	$(n-1)S_w^2 = SC(E)$	n-1	$S_w^2 = CM(E)$	CM(E)
Total (corrected)	(n-1)ST = SC(T)	n-1		

Table 2: Analysis of Variance

(Perez-Lopez, 2008)

General	Number	Half	Typical deviation	Typical error	confidence interval for the mean at 95%		Mini-mum	Ma-xi-mum
					Lower limit	Upper limit		
window 1	67	8.3542	.41751	.05101	8.2523	8.4560	7.29	9.05
window 2	46	8.3723	.37920	.05591	8.2597	8.4849	7.72	9.24
Window 4	32	8.4180	.39054	.06904	8.2772	8.5588	7.79	9.19
Customer service	4	7.9688	.28362	.14181	7.5174	8.4201	7.70	8.36
Sales	5	8.4750	.31908	.14270	8.0788	8.8712	7.95	8.73
Total	154	8.3667	.39722	.03201	8.3035	8.4300	7.29	9.24

Table 3: Descriptive statistics in each window

		Sum of squares	gl	root mean square	F	Next.
service environment	inter-groups	1,501	4	.375	1,066	.376
	intra-groups	52,474	149	.352		
	Total	53,975	153			
reliability	inter-groups	2,678	4	.670	3,050	.019
	intra-groups	32,708	149	.220		
	Total	35,386	153			
Interaction quality	inter-groups	.843	4	.211	.824	.512
	intra-groups	38,130	149	.256		
	Total	38,973	153			
Empathy	inter-groups	.245	4	.061	.334	.855
	intra-groups	27,373	149	.184		
	Total	27,619	153			
Total	inter-groups	.788	4	.197	1,257	.289
	intra-groups	23,352	149	.157		
	Total	24,140	153			

Table 4: ANOVA result

statistic for a group of k treatment means in an ordered array. α_E are the critical values of the error rate with respect to the experiment, and thevare the degrees of freedom.

For the calculation of simultaneous two-tailed confidence intervals for the absolute value of all differences by pairs, $\mu_i - \mu_j$, for all i # j are:

$|\bar{y}i - \bar{y}j| \pm DHS(k, \alpha_E)$

It is said that two treatment means are not equal.$\mu_i - \mu_j \neq 0$, Yeah:

$|\bar{y}i - \bar{y}j| > DHS(k, \alpha_E)$

(Kuehl, 2000)

RESULTS

Table 3 shows the average rating that was given to each window of the Bank, the quality of service offered by the Coyuca de Benítez bank is 8.36 in general, where the worst evaluated window was customer service with a rating of 7.96 and the best evaluated was the sales window with a rating of 8.47.

Table 4 shows the result of the analysis of variance, which analyzes the difference in means. In the dimensions Service environment, Interaction quality and Empathy, a p-value greater than 0.05 was obtained, this indicates that the average rating in each window is not significant at the level of significance. $\alpha = 0.05$, that is, the average obtained in each window in these dimensions are statistically equal.

For the Reliability dimension, a p-value of 0.019 was obtained, being less than the 0.05 significance level, this indicates that there is at least one pair of windows that have a statistically different average rating.

In table 5 that shows the results of the Reliability dimension, which in the ANOVA (table 4) showed that the analysis of variance is significant, for which a significant difference is observed between window 1 and customer service, the rating being higher window 1 than customer service. Window 2's rating is higher than Customer Service. Therefore, it is shown that the service provided by the customer service window is the one that has the greatest problems in Reliability.

In this study, the evaluation of the quality of banking service by teller window was studied, where the overall average found in all the windows was 8.6, which is optimal, unlike the average of the customer service window, which had the lowest average with 7.96. With respect to the analysis of variance, a significant difference was found in the Reliability dimension and that the windows that differed were window 1 and window 2 with the customer service window, which leads to the conclusion that the users of the customer service window do not offer as good a service as the other windows 1, 2 and sales. In the other dimensions, Service Environment, Quality of Interaction and Empathy, no significant differences were found. The results found coincide with the research of Duarte et al (2010), Carvajal (2013), González (2010), Torres et al (2016), that the agility of the service is important in the evaluation of the Quality of banking service.

Thus achieving the objectives set out in this study. For this reason, it is recommended to work on the service processes in customer service windows, to streamline the service in teller windows, to improve the Quality of Service in Teller windows and for the bank to achieve better customer satisfaction and loyalty.

Variable dependent	(I)Number of box	(J) Box number	Mean difference (IJ)	Typical error	Next.	Confidence interval at 95%	
						Lower limit	Upper limit
reliability	window 1	window 2	.02515	.08971	.999	-.2226	.2729
		Window 4	-.11684	.10068	.774	-.3949	.1612
		Customer service	.74254*	.24116	.021	.0766	1.4085
		Sales	.04254	.21721	1,000	-.5573	.6424
	window 2	window 1	-.02515	.08971	.999	-.2729	.2226
		Window 4	-.14198	.10785	.681	-.4398	.1558
		Customer service	.71739*	.24424	.031	.0429	1.3918
		Sales	.01739	.22063	1,000	-.5919	.6266
	Window 4	window 1	.11684	.10068	.774	-.1612	.3949
		window 2	.14198	.10785	.681	-.1558	.4398
		Customer service	.85938*	.24847	.006	.1732	1.5455
		Sales	.15938	.22531	.955	-.4628	.7816
	service customer	window 1	-.74254*	.24116	.021	-1.4085	-.0766
		window 2	-.71739*	.24424	.031	-1.3918	-.0429
		Window 4	-.85938*	.24847	.006	-1.5455	-.1732
		Sales	-.70000	.31430	.175	-1.5679	.1679
	Sales	window 1	-.04254	.21721	1,000	-.6424	.5573
		window 2	-.01739	.22063	1,000	-.6266	.5919
		Window 4	-.15938	.22531	.955	-.7816	.4628
		Customer service	.70000	.31430	.175	-.1679	1.5679

Table 5: Tukey HSD multiple comparisons by window

*. The difference in means is significant at the 0.05 level.

REFERENCES

Acuña , E. F. (2011). *Análisis de regresión.* Cd. de México: Universisdad de Puerto Rico.

Anderson, D. R., Sweeney, D. J., & Williams, T. A. (2008). *Estadística para administración y economía.* México, D.F.: CENGAGE Learning.

Berdugo-Correa,Barbosa-Correa&Prada-Angarita. (2016). Variables relevantes para la medición de la calidad percibida del servicio bancario. *Dyna*, pp213-222.

Carbaja,Leguina&Espinoza. (2013). Factores determinantes en la percepción de la imagen y calidad de servicios y sus efectos en la satisfacción del cliente.Un caso aplicado a la banca chilena. *Revista de ciencias Sociales*, pp255-267.

Chavarín, R. (2015). Morosidad en el pago de credito y rentabilidad de la banca comercial en México. *Revista Mexicana de economía y finanzas*, ISSN1665-5346-PP1-11.

Cronin&Taylor. (1994). Evaluacion de kla perpcepcion de la calidad de los servicios bancarios en Istmo de Tehuantepec con el modelo SERVPERF. *Contaduria y Administracion*, pp125-131.

Duarte,Oliveira&Cannarozzo. (2010). Satisfacción derteminante y atributos de calidad en el servicio bancario. *Scielo*, pp1-19.

González. (2015). Evaluación de la calidad del servicio percibida en entidades bancarias a traves de la escala SERQUAL. *Ciencia e Ingeniería Neogranadina*, pp113-135.

Gronroos, C. (1990). *Marketing y Gestión de servicios.* Madrid (España): Lexintong Books y Macmillan,Inc.
Hernandez, A. (2015). Liderazgo en la gestión del servicio en una entidad bancaria en colombia. *Universidad militar nueva granada colombia*, PP-35.

Kuehl, R. O. (2000). *Diseño de experimentos, Principios estadísticos de diseño y análisi de investigación, seguna edición.* México: Thomson Learning.

Montgomery, D. C., Peck, E. A., & Vining, G. G. (2011). *Introducción al análisis de regresión líneal.* Cd de México: Grupo editorial patria.

Parasuraman,Zeithaml&Berry. (1990). *Calidad total en la gestion de servicios.* Madrid (España): Ediciones Díaz de Santos,S.A.

Pérez-López, C. (2008). *Técnica de Análisis Multivariante de Datos Aplicaciones con SPSS.* Madrid (España): Pearson Prentice Hall.

Pourmohammad, H., Zandieh, M., & Farsijani, H. (2016). Ranking factors affecting the quality of banking services using analytic network process. *Decicion Science Letters*, pp 461 - 468.

Scheafer, R. L., Mendenhall, W., & Ott, L. (1987). *Elementos de musetreo.* México, D.F.: Grupo Editorial Iberoamérica S.A. de C.V.

Torres, J., & Luna, I. (2016). Evaluación de la percepción de la calidad de los servicios bancarios en el Istmo de Tehuantepec con el modelo SERVPEF. *Revista de Contaduría y Administración UNAM*, pp. en proceso de publicación.

Trujillo,Carrete,Vera&García. (2011). *Servir con calidad en México.* Ciudad de México: LID Editorial Mexicana.

item	Qualification
service environment	
The comfort of the waiting chairs during the service	
The cleanliness of the facilities	
The internal temperature inside the bank	
The appearance of the workers	
reliability	
The security of your transactions in the service of this bank	
The promises that the employees made to do it at a certain time and were fulfilled	
If employees show interest in solving your problems	
Rate the service you received the first time you visited this bank	
Rate the service you receive at the entrance of the bank	
Rate security within the bank	
Rate security outside the bank	
The security you feel about the information you receive from bank employees	
Interaction quality	
Rate the speed of service employees provide	
Rate the willingness of employees to answer your questions	
Rate the trust that employees transmit to you	
Empathy	
Rate employee understanding of your specific needs	
Rate the employees' concern for you.	
Rate the personalized service offered by the bank	
Rate the service hours offered by the bank	
What rating do you give to the service received?	
Rate the friendliness of the staff who deliver the shifts	

Questionnaire used with a scale of 0 to 10