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CUSTOMER SATISFACTION AND COMPETENCIES: AN EMPIRICAL STUDY OF AMBALA, KURUKSHETRA AND YAMUANANAGAR DISTRICTS OF HARYANA, INDIA

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ABSTRACT

We empirically address how customer satisfaction and loyalty in the banking industry may affect profitability. This helps to identify the strategy and competencies necessary to benefit from customer relationships which are important sources for improved performance in the banking. We do this

by analyzing data collected on 2,105 customers of 118 branches of State Bank of India. We find that customer satisfaction impacts loyalty, which in turn has a direct effect on financial and non-financial customer value/total customer value/complex customer value. Moreover, loyalty is a mediator between financial and non-financial customer value and two sources of customer satisfaction, namely relationships with the front office and the branch, on the one hand, and the products offered, on the other.

INTRODUCTION

Customer satisfaction results in better competencies and moreover loyalty generates positive word of mouth publicity results in increased trust among the customers. The broader emphasis, mainly in the management literature, that knowledge and learning has become ever more important as foundations of superior performance (Bartel, 2004; Bauer, 2003; Black and Lynch, 2005; Caroli and Van Reenen, 2001; Cohen and Levinthal, 1990; Cristiniet al., 2003; Foss et al., 2006; Greenan, 1996; Ichiniowski et al., 1997; Zwick, 2003). This arguably also holds for traditional industries, such as banking, which has been characterized by increasing competition both from within and outside the industry, increased transparency demands, an increased importance of information and communication technology, the growing possibility to standardize routine transactions and the explicit introduction of knowledge management (Camuffo and Costa, 1995; Keltner and Finegold, 1996; Hunter et al., 2001; Canato and Corrocher, 2004;Munari, 2000). In this paper we consider a specific way in which the new tendencies influence the organization of banking transactions, namely through a more extensive use of close customer relations. Such relationships are often seen in the recent business literature as means to build valuable capabilities (De Jong and Noteboom, 2000; Sako, 2000; Teece, 1992). Relationships can be characterized in terms of their nature

(strategic alliances, vertical relationships, lateral and horizontal relationships) and their intensity (e.g., contact frequency and quantity and type of the information exchanged) (De Jong and Noteboom, 2000; Sako, 2000; Teece, 1992). They can be divided into two main groups: Relationships within a firm (Baker, Gibbons, and Murphy, 2001), and relationships with the external environment. In the latter, two types of firm-customer relationships can be found (De Jong and Noteboom, 2000; Sako, 2000; Teece, 1992), namely those that are based on arms' length contracts and relational contracts, respectively. The latter is characterized by informal arrangements sustained by the value of future relationships (Baker et al., 2002). The focus of this paper is on such relational contracts. Extant literature suggests that firms that adopt this type of contracts are characterized by customer-oriented internal policies and long-term relationships (e.g., Munari, 2000). Banking firms may develop and nurture long-term customer relations for a number of reasons. First, the relevant services may be experience goods and reputation mechanisms may not work perfectly. Close customer contacts can overcome the resulting asymmetric information problem. Second, close relationships imply that customers make relationship specific investments, to a certain extent locking them in to the relation. Third, customers may be sources of valuable ideas concerning how to improve banking products and Services. Finally, attention to customer needs and the quality of the offered services give rise to customer satisfaction and retention. In order to build potentially valuable customer relations, a customer- rather than product-centered approach is often held to be necessary, one on which the focus is on the personalized management of a certain number of accounts and not of a certain number of products (Camuffo and Costa, 1995). In turn, building a customer-centered approach requires certain internal competencies, and arguably also an internal organization that fosters knowledge sharing is necessary. Thus, customer satisfaction and

loyalty are both a result and a source of competency creation.

Although theory thus suggests that long-term relationships may be causes of improved financial performance because they help to reduce costs, increase quality, improve products and services, and create long-term customer loyalty, there is a considerable lack of empirical knowledge, particularly in retail banking. Arguably, an important reason is that customer satisfaction and retention have been difficult to measure (Munari, 2000).

The present paper fills this void by analyzing customer relationships in retail banking, arguing a potential source of improved performance for banks. For a sample of 118 retail branches belonging to State Bank of India, we put forward and test hypotheses concerning the relationship among financial and non-financial customer value for the branch, customer satisfaction and customer loyalty.

OBJECTIVES OF THE STUDY

a) To know whether there is any relation among customer satisfaction, loyalty and profitability.

b) To find out the nature of this relationship (i.e., if it is a direct one or if there are multiple causal relationships; if there are mediator or moderator variables).

c) To find out the total impact of above variables on competencies of Bank.

EMPIRICAL SETTING AND DATA SOURCES

The Econometric Case Study Method

This research focuses on a single organization, namely, a State Bank of India, in which the unit of analysis is the customer.[1] In other words; we adopt the econometric case study method, a fairly recent empirical approach. In spite of what seems to be an evident problem with external validity that is associated with a single case study, the approach is by no means void of this kind of validity (cf. Jones et al., 2006; Baker et al., 2002). Moreover, unlike firm-level studies, econometric case studies, such as Hamilton et al. (2003), make use of field work to acquire a thorough understanding of a firm, are able to investigate particular issues, because of the lower aggregation level employed, and allow the use of interviews, which may provide important clues as to how to Interpret other data. Moreover, in econometric case studies qualitative analysis assumes a supportive, and often important, role (Jones, et al., 2006).

Data Sources

The econometrical analysis presented in this work is based questionnaire. The questionnaire is particularly important for this research, namely questions belonging to the "Satisfaction" section and the "Loyalty" section. Our data set includes other general information about the customers: Length of the relationship with the managers in term of number of years; annual number of transactions; number of products that the customers hold; Rating;[3] value of the products that the customer holds; and the HRI classification.[4] 2995 customers answered the questionnaire.

The second source of data includes, for each branch, the value of its fixed assets and the investments made during 2009; the interest margin and revenues from services; years in operation, number of employees, number of customers, and location.

Sample Identification

Since the CS survey was conducted on a statistically representative sample of the customer

population[5], we identified the sub-group of branches for which satisfaction data was in general informative enough.

By considering all[6] relevant questionnaire variables of interest, factor analysis can be used for building a first synthetic satisfaction index for each customer. The customer satisfaction variables are categorical variables on a scale from 1 to 10 (from dissatisfied to very satisfied). For variables about products satisfaction, the average of the "logic" answers were considered, that is the answers of the customers who hold the specific product. Moreover, the loyalty variables were binary; the questions to which they are related are the following: 'Do you use other banks?'; 'Is [name of the bank] your main bank?'

Four types of products were considered: Bank accounts, investments, financing, and insurance. After consulting the marketing department, we excluded the insurance product because it seemed to be the one with the lowest impact on customer satisfaction. We then considered only the second question and totaled the corresponding answers. In this way we obtained a categorical variable on a scale from 0 to 3. Before running the factor analysis, we recoded all these variables on a scale from 1 to 4.

In accordance with established literature, we extracted the factors whose Eigen-values exceeded 1 (Kline, 1994; Hair et al., 1995; Jackson, 1991; Johnson and Wichern, 1992). In doing so, we obtained two factors. The first one included customer satisfaction with the image of the bank and relationships with the managers. The second one included customer satisfaction with first, relationships with the front-office; second, relationships with the branch; and third, the products.[7] The loyalty variable coefficient seemed too low to be taken into consideration in any factor. A confirmation of our choice to keep two factors came from the screen test. We

then estimated a synthetic customer satisfaction index by totaling the factors, weighing them with the variance explained. Table 1 shows the resulting factors. Starting from these indices, we calculated the average satisfaction with each branch. It should be noted that we did not adopt a weighted mean in order to give each customer adequate importance. This was possible thanks to double stratification, which assigns the right proportion to the different types of customer in the sample. Since some branches show a very low samples number, in order to identify the sub-group of branches with average satisfaction data that were sufficiently informative, the following criterion was adopted : the confidence interval was calculated at the 95% level for the mean μ of the synthetic satisfaction index (y), with the hypothesis that this index featured an approximately normal distribution. The confidence. Interval is defined by two boundaries, $IC_{i,0.95} = (\mu_{i,INF}, \mu_{i,SUP})$, so that the probability that the real mean (calculated on all the customers of the branch) lies between the two boundaries is 95% the two boundaries are determined by the following formula: $\mu_{i,INF} = \bar{y} - 1.96\sqrt{\hat{\sigma}/n_i}$, $\mu_{i,SUP} = \bar{y} + 1.96\sqrt{\hat{\sigma}/n_i}$, Where $\hat{\sigma}$ is the standard deviation of the synthetic satisfaction index for the entire population level: $\hat{\sigma} = (n-1)^{-1}\sum_{i}^{n}(y_i - \bar{y})^2$. . the variance of the synthetic satisfaction index was assumed to be the same for all the branches.

Table 1: Identification of the sample branches: factor analysis.

Variable	1	2
cs_imm1	0.47	0.24
cs_imm2	0.42	0.25
cs_relempl2	0.04	-0.03
cs_relempl3	0.28	0.52
cs_relempl4	0.03	0.67
cs_relempl5	0.26	0.43
cs_relempl1	0.81	0.02
cs_relempl2	0.91	-0.04
cs_relempl3	0.91	-0.04
cs_relempl4	0.78	0.08
cs_relempl5	0.86	-0.01
cs_relempl6	0.84	-0.01
cs_relbranch1	0.06	0.60
cs_relbranch2	-0.04	0.69
cs_relbranch3	0.03	0.63
cs_relbranch4	-0.11	0.78
cs_relbranch5	0.14	0.61
avcs_prodr	0.38	0.38
Lay	0.01	0.05
Eigen value	0.87	1.01
Proportion	0.89	0.10
Cumulative	0.89	1.00

Factors obtained with factor analysis and varimax rotation.

Table 1a Customer Satisfaction with products : factor analysis result

Variable	1	2
Cs_ba1	0.24	-0.31
Cs_ba2	0.23	-0.25
Cs_ba3	0.22	-0.03
Cs_inv1	0.05	-0.75
Cs_inv2	0.19	-0.79
Cs_inv3	0.17	-0.84
Cs_inv4	0.10	-0.83
Cs_inv5	0.15	-0.82
Cs_fin1	0.33	0.04
Cs_fin2	0.43	-0.18
Cs_fin3	0.80	-0.10
Cs_fin4	0.87	-0.15
Cs_fin5	0.81	-0.18
Cs_fin6	0.83	-0.18
Cs_fin7	0.72	-0.08
Eigen value	5.80	2.38
Proportion	0.68	0.28
Cumulative	0.68	0.96

Rotated factors: varimax rotation.

Since $p_{97.5}(y) - p_{2.5}(y) = 9$ more precisely ,the interval of variation between the 97.5th and the 2.5th percentiles is 9,) the mean data for the branches for witch $\Delta_i = \mu_{i.SUP} - \mu_{i.INF} \leq 6$ was chosen "heuristically" as significantly informative. The 367 branches in the initial sample were reduced to 118.

MEASURES

The following section provides a description of the construction of the variables used in the model.

Rating

The rating is the dependent variable. It was built by the marketing department of the bank. It is defined as a function of: Cross-selling (the number of products that the customer holds); the value of the products that the customer has; and the Intermediation Margin, or the total revenue[8] generated by each customer for the respective branch. Thus, the rating expresses not only a financial value of the individual customers for their branch, but a complex, total value that includes the number and the value of the products they hold that can have an effect on the branch's performance. Rating varies on a scale from 1 to 8.

Loyalty Index

Loyalty expresses the extent to which the bank under study is the main bank for the customer. The corresponding question in the questionnaire is: 'Is [name of the bank] your main bank?' This question is repeated for each product. Thus, Loyalty is built as the sum of three binary variables. We recoded it on a scale from 1 to 4.

Customer Satisfaction Indices

The synthetic CS Index expresses total customer satisfaction. It includes the items of the questionnaire on customer satisfaction with relationships and products. Not all the variables are of relevance for our work. In fact, some variables concerning the bank do not show any variance among the branches, because they refer to aspects that are decided at the central level (by the banking Group). After consulting the marketing department, we have excluded these variables.[9] More precisely, relationships are divided into relationships with: The front office; the managers; and the branch, while products are divided into: bank account; financing; and investments. All the variables were categorical variables on a scale from 1 to 10 (from dissatisfied to very satisfied). The overall index is built as a mean of all the items. This was possible thanks to a Cronbach's alpha value larger than 0.6 (0.95).[10]

In addition, since the items that we consider in our analysis are divided into two main groups -- that is relationships and products -- we defined two more variables, namely CS with relations, which measures customer satisfaction with relations (Cronbach's alpha value = 0.95), and CS with products, which captures customer satisfaction with products (Cronbach's alpha value = 0.87). Specifically, CS with relationships, the focus of this study study, is the average of the responses to the items set out in Table 2.

Table 2: CS with relationship' components.

	Front Office employees
Cs_relemployee2 Cs_relemployee3 Cs_relemployee4 Cs_relemployee5	Qualification Willingness to give information and explanations Speed in attending to customers,' business recognition
	Managers
Cs_relmanager1 Cs_relmanager2 Cs_relmanager3 Cs_relmanager4 Cs_relmanager5 Cs_relmanager6	Capability to make interesting proposals Capability to meet customer's needs Capability to slove customer's feel special Capability to make the customer feel special Flexibility in the management of the customer's requests credibility
	Branch
Cs_relbranch1 Cs_relbranch2 Cs_relbranch3 Cs_relbranch4 Cs_relbranch5	Simplicity of orientation Waiting areas' look Privacy guaranteed by the dedicated consultant spaces Waiting time at the front office Waiting time to terminate a contract

Table 2A: Rating, Loyalty and Overall Customer Satisfaction Relationship with CS index build through the factor analysis.

Independent Varibles	Model 1 (17) Dep. Var. : Rating			model 2 Dep. Var. : Loyalty		
	Coeff.	P>z	S.	Coff.	P>Z	S.
Branch level control variables:						
- Number of employees (size)	-0.005	0.179		-0.011	0.001	***
- Year in operation (In)	0.085	0.176		0.127	0.150	
- City/town	0.051	0.590		-0.164	0.137	
- BG	-0.043	0.627		-0.010	0.937	
Customer level control variables:						
- Year of relationship with the branch	0.032	0.000	***	0.005	0.495	
- Number of transactions	0.001	0.063	*	0.004	0.000	***
- HRI	-0.017	0.852		0.265	0.020	***
Customer Satisfaction (18)	0.006	0.131		0.032	0.000	***
Obs.	874			816		
Wald Chi2	56.92			74.18		
Prob Wald Chi2	0.000			0.000		
Pseudo R2	0.0194			0.0757		

Ordered probit estimation controlled for clusters.

*** are for p-value< 0.01; ** are for p-value< 0.05; and * is for p-value,0.1.

However, given the subject analyzed in this paper, it is interesting to investigate the existence of relationship sub-groups and their effect on CS. In order to test the existence of these correlations, we ran a factor analysis on all the items referring to CS with relationships (i.e. the items described in table 3).

Following the above mentioned criteria, we obtained only one factor. Thus, in order to identify relationship sub-groups and their effect on CS, on loyalty as well as financial and not- financial customer value, we forced the Eigen-values criterion, obtaining two factors. The first factor refers to relationships with managers while the second involves relationships with the front- office and the branch. It is worthy of note that the results are similar to those of the factor analysis that we conducted in order to identify the sample. This seems to give power to the factors we found. Table 3 shows the factor analysis output.

Table 3: Deepening Customer Satisfaction with Relationships: Factor Analysis.

Variable	1	2
cs_relempl2	0.04	0.65
cs_relempl3	0.48	0.65
cs_relempl4	0.32	0.76
cs_relempl5	0.48	0.57
cs_relempl1	0.82	0.33
cs_relempl2	0.87	0.34
cs_relempl3	0.86	0.32
cs_relempl4	0.81	0.37
cs_relempl5	0.84	0.36
cs_relempl6	0.82	0.37
cs_relbranch1	0.33	0.70
cs_relbranch2	0.22	0.74
cs_relbranch3	0.32	0.67
cs_relbranch4	0.22	0.79
cs_relbranch5	0.41	0.69
Eigen value	9.23	1.32
Proportion	0.62	0.09
Cumulative	0.62	0.70

Factors obtained with factor analysis and varimax rotation.

Table 3A: Rating, Loyalty and Customer Satisfaction with relations built through the factor analysis: relationships

	Model3		mobel4		model5		model6
Independent variables	**Dep. Var. : Rating**		**Dep. Var. : Rating**		**Dep. Var. : Loyalty**		**Dep. Var. : Loyalty**
	Coeff.	P>Z S.	Coff.	P>Z S.	Coeff.	P>z S.	Coeff. P> z S.
Branch level control variables:							
-Number of employees (size)	-0.004	0.207	-0.004	0.0225	-0.009	0.002 **	-0.009 0.002**
-Years in operation (in)	0.076	0.150	0.074	0.161	0.013	0.843	0.012 0.858
-City/town	-0.039	0.633	-0.028	0.729	-0.097	0.346	-0.087 0.398
-BG	-0.090	0.198	-0.092	0.190	-0.006	0.948	-0.009 0.927
Customer level control Variables:							
-Years of relationship with	0.031	0.000 ***	0.031	0.000 ***	0.013	0.024	0.013 0.017 **
The branch							
-Number of transaction	0.002	0.001 ***	0.002	0.001 ***	0.005	0.000 ***	0.005 0.000 ***

-HRI	0.046	0.466		0.044	0.477		0.297	0.000 *** 0299
0.000 ***								
Customer Satisfaction with								
Relations (19)								
Factor 1 (rel. with managers)	-0.043	0.0135				0.206	0.000 ****	
Factor2 (rel. with front office	0.065	0.019 **				0123	0.004 **	
Employees and branch								
Synthetic index			-0.052	0.262			0.347	0.000 ***
Obs.	1546		1546		1427		1427	
Wald Chi2	115.87		112.25		144.50		143.48	
Prob Wald Chi2	0.0000		0.019		0.071		0.067	

Ordered probit estimation controlled for clusters.

*** are for p-value<0.01; ** are for p-value< 0.05; and * is for p-value< 0.1.

The proportion's coefficients show that most of the variance is in general explained by the relationships with the managers.[11] This is also confirmed by the coefficients of the factors. Comparing the two factors, if time is a key aspect for bank account transactions, for investments or other more important transactions, customers place a much higher value on the competencies of the managers. Although the coefficients of the factors do not vary significantly from one another, it seems that for both consultants and front-office employees, actual competencies are more important that training and expected or required competencies. It should be noted that also the impacts of the variables on the factors seem to be confirmed

compared to the factor analysis that we ran to identify the sample. We then obtained a synthetic customer satisfaction index by totaling the factors, weighting them with the variance explained.

Controls

Some controls have been added to the model at two levels of the analysis: The customer level and the branch level. At the customer level there are the following controls: The duration of the relationship in terms of years; the number of transactions; and the AIR/BIR classification.[12] The length of the relationship and the number of transactions through the bank account are continuous variables. HRI(High Relational Intensity) is a classification of customers on the basis of the possibility to estimate their income. In fact, the marketing department has noted that, if the customer's income can be identified, that is, if the customer credits his/her income on the bank account of the bank under study, then the customer has a high relational intensity with the respective branch ('High Relational Intensity'). It was recoded on a scale from 1 to 2: 1 if the customer has a low relational intensity with the respective branch and 2 if he/she has a high relational intensity. At the branch level there are: The number of employees; the years in operation of the branch; and the location. The number of employees is a continuous variable. For the years in operation, we used the natural logarithm. To control for the location of the branch we built two dummy variables: the first controls for the location in a city or in a town; the second controls for the location in the main province in which the Group operates. This will allow us to observe the impact that some branch level variables have on the customer level dependent variable under study. In fact, an important source of information of these data is the fact that they are at two levels: a micro level, i.e. the customer, and a macro level, i.e. the branch. Moreover, it is possible to depict the effects of the customer level controls on the customer level dependent variable and control for them. Table 4 shows some statistics for the variables.

Table 4: Mean, Standard Deviation, Minimum and Maximum Value and Correlations.

Variables	Mean	St. Dev.	Min.	Max.
- Rating	5.27	2.65	1	8
- Number of employees	17.13	15.07	3	72
- Years in operation (in)	3.71	0.88	1.79	4.91
- City/town	0.64	0.48	0	1
- Bg	0.45	0.50	0	1
- Years of relationship	10.12	7.75	0	33
- Number of transaction made By the customer	71.87	52.47	0	596
- HRI	1.61	0.49	1	2
- Total Customer Satisfaction (mean)	7.76	0.94	3.43	9.93
- CS with relations	7.88	1.24	1	10
- CS with products	7.62	0.74	2.67	9.87
- Loyalty	2.75	0.58	0	3

Table 4A: Rating, Loyalty and Customer Satisfaction with products built through the factor analysis: relationship

		a	b	c	d	e	f	g	h	I	j	k	l	
		1												
a.	Rating	0.00	1											
b.	Number of employees	0.02	0.38	1										
c.	Year in operation (In)	0.02	-0.37	0.18	1									
d.	City/town	-0.01	-0.06	0.46	0.05	1								
e.	Bg	0.20	0.00	0.05	0.02	0.04	1							
f.	Years of relationship													
g.	Through the bank account	0.10	0.03	0.05	0.00	0.07	0.11	1						
h.	AIR/BIR	0.04	0.02	0.01	0.00	0.00	0.03	0.23	1					
i.	Cstot (mean)	0.05	0.01	-0.06	-0.01	-0.07	-0.01	0.02	0.00	1				
j.	Csrel (mean)	0.01	0.01	-0.03	0.00	-0.03	-0.01	0.02	0.00	096	1			
k.	Csprod (mean)	0.00	-0.02	-0.05	0.00	-0.05	-0.03	0.02	-0.01	0.91	0.76	1		
l.	Loyalty	0.12	-0.06	-0.02	0.00	0.00	0.09	0.19	0.15	0.21	0.18	0.21	1	

Table 4B: Rating, Loyalty and Customer Satisfaction with products built through the factor analysis: relationship

Independent Variables	Model 7 Dep. Var. : Rating		Model 8 Dep. Var.: Rating		Model 9 Dep. Var. : Rating		Model 10 Dep. Var. : Loyalty			
	Coeff.	P>z	S.	SCoeff.	P>z	S.	Coeff.	P>z	S.	Coeff. P>z S.
Branch level control variables:										
-Number of employees (size)	-0.002	0.585	-0.002	0.589	-0.007	0.004 **	-0.007	0.007 **		
- Years in operation (In)		0.053	0.224	0.052	0.237	0.037	0.559	0.030	0.634	
- City/ Town		0.009	0.896	0.009	0.892	-0.064	0.477	-0.061	0.513	
-BG		-0.073	0.238	-0.074	0.235	-0.000	0.997	-0.006	0.944	
Customer level control variables:										
-Years of relationship with the										
Branch	0.029	0.000 ***		0.028	0.000 ***		0.017	0.000 ***		0.016 0.001 ***
-Number of transactions	0.002	0.000 ***		0.002	0.000 ***		0.005	0.000 ***		0.005 0.000 ***
-HRI	0.031	0.600		0.030	0.611		0..275	0.000 ***		0.277 0.000 ***
Customer Satisfaction about										
Products(20)										
Factor 1(fin)	-0.003	0.725		0.044	0.000 ***					
Factor2	-0.010	0.045 **		-0.025	0.001					
Synthetic index				-0.010	0.368				0.045	0.002 **
Obs.	1992		1992	1822		1822				
Wald Chi2	144.31		142.70	148.92		107.04				
Prob Wald Chi2	0.000		0.000	0.000		0.000				
Pseudo R2	0.0153		0.015	0.0618		0.047				

Ordered probit estimation controlled for clusters.

*** are for p-value 0.01; ** are for p-value<0.05; and * is for p-value<0.1.

Models

Due to the type of our dependent variable, which is a categorical variable on a scale from 1 to 8, we use for our estimation the ordered probit model. This model is defined as follows:

$$\Pr(y_{ij} \neq 0 \mid x_{ij}) = \Phi(x_{ij}b)$$

Where I is the client, j is the branch, is the inverse of the normal standard cumulative distribution, and xijb is the ordered probit score or ordered probit index. Moreover, we have controlled for the clusters. This option specifies that the observations are independent across group (clusters) but not necessarily within groups. thus, our models are the following:

$$\Pr[Rating] = \alpha + controls + \beta_1 CS + errorterms \quad [1]$$

$$\Pr[Loyalty] = \alpha + controls + \beta_1 CS + errorterms \quad [2.1]$$

$$\Pr[Rating] = \alpha + controls + \beta_1 Loyalty + errorterms \quad [2.2]$$

The first model tests the existence of a direct relationship between customer satisfaction and the value of each customer for the branch he/ she belongs to. The second model includes two equations. It is used to test whether there is an indirect relationship between customer satisfaction and the value of the customer for the branch. More precisely, we test the role of customer loyalty; specifically, whether it is a mediator variable (between cs and performance) or whether there is a causal relationship among customer satisfaction, customer loyalty and financial and not-financial customer value.

Loyalty functions as mediator if it menthe following conditions(1) variations in levels of the independent variable (csi) account significantly for variations in the presumed mediator (loy)

i.e path (i);(ii) variations in the mediator account significantly for variations in the dependent

Variable (rating) (i.e., path (ii)); (iii) when paths (i) are controlled, a previous significant relation between the independent and dependent variables is no longer significant, with the strongest demonstration of mediation when path (iii) is zero. When path (iii) is reduced to zero, we have strong evidence for a single, dominant mediator. Path (iii) is not zero, this indicates the operation of multiple mediating factors. From a theoretical perspective, large reduction of the significance of the dependent variable demonstrates that a given mediator is indeed potent, albeit not both a necessary and sufficient condition for an effect to occur (baron and Kenny, 1986).

Results and Discussion

We first consider the impact of overall customer satisfaction on the rating (see Model 1, Table 5).

Table 5: Rating, Loyalty and Overall Customer Satisfaction Relationship

	Model 1 [13]			Model 2			Model 3	
Independent Variables	**Dep. Var.: Rating**			**Dep. Var.: Loyalty**			**Dep. Var.: Rating**	
	Coeff.	P>z	S.	Coeff.	P>z	S.	Coeff.	P>z S.
Branch level control variables								
- Number of employees (Size)	-0.05	0.172		-0.012	0.000	***	-0.0001	0.741
- Years in operation (In)	0.086	0.169		0.135	0.120		0.020	0.633
- City/ town	0.049	0.601		-0.174	0.113		0.031	0.649
- BG	-0.044	0.625		-0.016	0.899		--0.058	0.384
Customer level control variables:								
- Years of relationship with the Branch0	0.032	0.000	***	0.005	0.486		0.027	0.000 ***
- Number of operations	0.001	0.063	*	0.004	0.000	***	0.001	0.003 **
- AIR/BIR		-0.017	0.852		0.260	0.024	**	0.001 0.003 ***
Customer Satisfaction[14]	0.059	0.103		0.322	0.000	***		
Loyalty							**0.169**	**0.001 *** **
OBS.	874			816			1920	
Wald Chi2	57.10			77.96			120.67	
Prob Wald Chi2	0.000			0.000			0.000	
Pseudo R2	0.0195			0.0778			0.0167	

Ordered probit estimation controlled for clusters.

*** are for p-value< 0.05; and * is for p-value< 0.1.

Note that in this model the number of observations is reduced substantially. In order to test the representativeness of the sub-sample, we ran a t-test on the differences between the means and the standard deviations of the two samples. Table 6 shows the results.

Table 6: The T-Test

Variable	Sample 1: 2105	Sample 2: 874		Max	t-test on mean differences	
	Mean	Mean	Std. Dev			
Number of employees (size)	17.12732	17.27231	15.37814	3	72	0.812
Years in operation (in)	3.70726	3.710258	0.887366	1.791759	4.912655	0.933
City/town	0.453682	0.632723	0.482339	0	1	0.920
BG	10.12257	0.464531	0.499026	0	1	0.589
Years of relationship with the branch	7	9.947368	7.723722	0	33	0.574
Number of transaction	1.86556	80.17506	56.96043	0	596	0.000***
	1.609501	1.643021	0.479383	1	2	0.086

The sub-sample seems to be representative of the original sample. However, the number of

transactions made by the customers seems to bias the sub-sample.

Considering the results in Table 5, the only controls that have significant effects are the ones at the customer level. This seems to suggest that what really matters for the value of the customers for the branch, that is for their 'branch's performance', is the attention to the customer level elements. In particular, the length of the relationship and the number of bank account transactions are statistically significant. This means that the longer the relationship with the branch and the higher the probability that customers perform bank account transactions, the greater the probability that the customer becomes more profitable for the branch. Note that the length of the relationship with the branch may be taken as a proxy for relational competencies, so that the analysis shows that as these types of competency increase, so does the profitability of the customer to the branch. The first model also shows that there is no direct relation between customer satisfaction and the value of the customers for the branch. The customer satisfaction index is, in fact, not significant, so that our first hypothesis is rejected.

However, the literature and the results of the first model seem to suggest that loyalty (or trust) may be another important variable for the subject of our analysis. Since there is no direct effect between CS and performance, as we have already noted, loyalty cannot be a mediator between these two variables. As described above, this is a condition for the existence of a mediation effect. What we are going to test is, thus, the existence of a causal relationship among Customer Satisfaction, Loyalty, and Rating. The test is performed by running models [2.1] and [2.2].

The results are presented in Table 5 (models 2 and 3). Also in this case, what really matters are the elements at the customer level. This is confirmed by the significance of a long-term relationship and the number of transactions for the Rating, while HRI classification becomes

significant for the loyalty, to the detriment of the length of the relationship between the customer and the branch. Thus, if the customer credits his/her income on the bank account (that is, if the customer has a high relational intensity with the respective branch), the probability that such a customer will choose it as his/her own main bank increases.

Note also that the size of the branch negatively impacts the loyalty probability. This may be taken as an indication that the bigger the firm, the more difficult it is to implement those internal arrangements that support the building of close, long-term customer relations, such as lower delegation, motivation, and attention to employees (cf. Foss, Laursen, and Pedersen, 2007). Moreover, we might argue that the experience of the branches and their location do not influence customer loyalty and their value to the branch. However, the general experience of the branch should not be conflated with the development of relational competencies, which seem to have a direct impact on the profitability of the customers, even though they are not of direct relevance to their loyalty.

Concerning the main independent variables and their significance, we can state that the presence of customer satisfaction increases the probability of customer loyalty and therefore the value of the customer for the branch. In addition, it may be noted that, due to the fact that the moderation effects are difficult to interpret in an ordered probit analysis, we have considered the overall customer satisfaction index to approximate these effects, so that these results could suggest the existence of a moderation effect between the different types of customer satisfaction. As already indicated, there are two main groups of customer satisfaction variables, that is, one that concerns CS with relationships and the other CS with products. Considering the means of these two groups, we are going to test the same preceding models. Table 7 shows the results.

Table 7 :- Rating, Loyalty and Customer Satisfaction with relations and products: relationships.

Model 4		Model 5	Model 6			Model7				
Independent Variables			**Dep. Var.: Rating**			**Dep. Var.:**			**Dep.**	
Var.:	**De. Var.:**									
			Coeff.	P>Z	S.	**Loyalty**			**Rating**	
	Loyalty									
Coeff.	P>z S.	Coeff. P>z S.	Coeff.	P>z	S.					
Branch level control variables:										
- Number of employees (size)			-0.004	0.220		-0.009	0.001	***	-0.002	0.494
-0.009	0.003**									
- Years in operation (In)			0.076	0.150		0.012	0.850		0.036	0.495
0.135	0.079*									
-city/town			-0.027	0.737		-0.102	0.321		0.082	0.320
-0.130	0.213									
-BG			-0.092	0.192		-0.005	0.954		-0.052	0.510
0.057	0.613									
Customer level control variables:										
-years of relationship with the branch			0.032	0.000	***	0.012	0.033	**	0.028	0.000
***0.011	0.077 *									
-Number of operations			0.002	0.001	***	0.005	0.000	***	0.001	0.012
***0.004	0.000 ***									
-AIR/BIR				0.045	0.477		0.296	0.000	***	-0.060
0.520	0.245	0.021 **								
Customer Satisfaction with relations15			0.013	0.570		0.188	0.000	***		
Customer Satisfaction with products[16]									0.011	0.795
0.3790.000 ***										
Obs.			1546			1427		1079		1000
Wald chi2			108.72			108.18		53.42		79.94
Prob wald chi2			0.000			0.000		0.000		0.000
Pseudo R2			0.018			0.069		0.014		0.073

Ordered probit estimation controlled for clusters.

*** are for p-value< 0.01; ** are for p-value<0.05; and * is for p-value<0.1.

The control variables confirm the preceding insights: what really matters is the customer level. A difference should be noted: all three customer level controls have a significant impact on loyalty. Thus, the relationship between customer satisfaction and loyalty, on one side, and their value for the branch, on the other, seems to emerge stronger than before. A longer relationship and a higher relational intensity, thus developing relational competencies, increases the number of transactions made through the bank account, due to a deeper feeling of trust by the customer, and profitability for the branch in the process. Another difference with the preceding models is the significant impact of the years in operation of the branch on the loyalty of the customer when we include in the model customer satisfaction with the products. This could be explained as follows: more experience makes the branch offer more interesting products to the customers who, thus, become more loyal. It is also confirmed the negative effect of the size on customer loyalty.

Considering the variables about customer satisfaction, all have a significant impact on loyalty. The causal effect between customer satisfaction and loyalty, on one side, and customer value, on the other, is confirmed. Customer satisfaction increases the probability that the customer chooses the bank as his/her own main bank and, in doing so, increases both his/her financial and non-financial value. Concerning the customer satisfaction variables built with the factor analysis we obtain the same results by running the same mode, This also holds for the single factors that compose customer satisfaction with relationships and the products. It is not our intention to show here the results, but what seems to be of interest is that for two types of customer satisfaction variables, the loyalty variable is a mediator. Specifically, there is: a direct relationship between (i) the second factor of customer satisfaction with relationships that is cs with the relations with front office and the branch and (ii) rating. In addition, this of type of cs

impacts also loyalty. All the conditions are satisfied for the existence of the mediation effect. The same happens for cs with the bank account and the investment products. This suggests us test whether loyalty could be a statistically significant mediator of customer satisfaction with rating. In order to that we run the following models:

$$Rating = \alpha + controls + \beta factor2 + \gamma Loy + \mu + \varepsilon$$

$$Loy = \alpha + controls + \beta factor2 + \mu + \varepsilon$$

And

$$Rating = \alpha + controls + \beta csproduct + \gamma Loy + \mu + \varepsilon$$

$$Loy = \alpha + controls + \beta csproduct + \mu + \varepsilon$$

And calculate the product of the p-values of β and γ for each pair of equations. It is less than 0.0253, so the null hypothesis that $\beta^*\gamma=0$ is rejected and loyalty is a mediator (Kenny, 2006)[16]

DISCUSSIONS AND SUGGESTIONS

Much recent literature has argued that long-term relationships have the potential of bringing numerous benefits, such as reduced costs, long-term customer loyalty, useful knowledge that assist product innovation, etc. thus improving the performance of the firm. However, especially in retail banking, there is considerable lack of empirical evidence due to the fact that customer satisfaction and retention are difficult to measure (Munari, 2000). The contribution of this work is to provide an empirical analysis of customer relationships inside retail banking, suggesting that they are potential vehicles of learning and therefore a potential source of improved

financial performance.

We have tested this by exploring first whether there is a relationship between customer satisfaction and loyalty, on one side, and profitability of the customers for the branch, on the other, and then we have examined the nature of this relationship. The results show that there is not a direct relationship between customer satisfaction and financial and not-financial customer value for the branch. Considering that, there cannot be a mediation effect between these two variables. Thus, there is a causal relationship. More precisely, customer satisfaction directly impacts customer loyalty, which has a direct effect on the profitability of customers for the branch. However, the loyalty variable becomes a mediator in the case of customer satisfaction with relationships with the front office and the branch and in the case of customer satisfaction with the products. Thus, it is arguable that, on the one hand, loyalty is determined in part by customer satisfaction, which impacts the profitability of the customers. On the other hand, it is important to distinguish between the different types of customer satisfaction. There are, in fact, different relations between the different types of customer satisfaction and financial and not-financial customer value for the branch. Some of them could be stronger and have a much greater impact on the branch's performance. Thus, managers should care about the loyalty of their customers but also about their satisfaction, in particular certain types of customer satisfaction. Thanks to the structure of the data, made on two levels of analysis, the branch level, that is the macro level, and the customer level, that is the micro level, we were also able to examine the existence and the nature of micro-macro relationships.

It is not all and not always that the branch level variables affect customer level variables, like rating or loyalty. Still, it can be argued that the larger the branch, the smaller the probability that customers choose it as their own main bank. This suggests that large banking firms may

have difficulties structuring their organization to build relationships with customers. Instead, small branches make delegation and employee empowerment more feasible, so that a more customer oriented strategy can be implemented. Long-term, intensive and trusting relations with customers and, consequently, the development of relational competencies increase the profitability of the customers for the branch. Trust-based relations also increase the loyalty of the customers when we consider separately the two types of customer satisfaction. Consequently, in order to increase the profitability of the customers for the branch, what really matters is the way the employees of the branch relate themselves to customers.

Some limitations of our study could be the source of future in-depth examinations. For example, in this study we used rating as a performance variable, a function not only of the financial value of the customer but also of the number of products and the value of these for the branch. A suggestion for future researchers could be to consider the financial value of the customer per se as a dependent variable, that is his/her total revenue creation for the branch. The moderation effects between the different types of customer satisfaction might also be further explored.

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[1]In addition, some relationships between the branch level and the customer level will be considered.

[2] The retail customers of a bank include individuals and small businesses.

[3]The rating measures the profitability of customers for the branch, not only in terms of total revenue but also in terms

of the number and value of the products they hold.

[4]HRI(High Relational Intensity) is a classification of customers on the basis of their income and age.

[5] The Customer Population is retail banking customers including individuals and small businessmen.·

[6] In order to build this first synthetic index, we also considered the variables chosen inside the loyalty section of

the

questionnaire and all the satisfaction variables (except the one about communication). As indicated in the paper, we will use for our models another index with only some customer satisfaction variables about relationships.

7 Product Means financial products

[8] This is a measure of the financial performance of the branch at the customer level.

[9] In doing so, we obtained a total of 47 variables: 2 about customer satisfaction with the image of the bank; 5 about customer satisfaction with relationships with front-office employees; 6 about customer satisfaction with relationships with the managers; 5 about customer satisfaction with relationships with the branch; 1 about customer satisfaction with communications between the branch and the customer; 1 about customer satisfaction with relationships in general; 19 about customer satisfaction with products; 1 about customer satisfaction with the bank in general; and 7 about customer loyalty. Then, we considered the two main groups of variable available: one about CS with relations; and one referring to CS with the products. We did not consider the first variable concerning relationships with front-office employees due to correlation problems.

[10] Thanks to the Cronbach's alpha value we were also able to build an index with the factor analysis. We obtained the same results in our estimation. Here, we are going to describe only the analysis run with the mean due to space problems. The results obtained with the factor analysis indices are shown in the Appendix.

[11] This is probably a consequence of the forcing in running the factor analysis.

[12] We should not use the number of transactions and the number of products together (their correlation is about 0.5165);

and with rating as a dependent variable, we have not used the number of transactions as a control, because rating is built as a function of this last variable.

[13] As explained, the sub-sample in models 1 and 2 seems to be not biased and representative of the 2105 Customer belonging t the original sample

[14] This Customer Satisfaction index is the mean of the item about customer satisfaction with relations and products.

[15] this Customer Satisfaction index is a mean of the entire item about CS with relations.

[16] this Customer Satisfaction index is a mean of all the items about CS with products.

17 As explained, the sub-sample in models I and 2 seems to be not biased and representative of the 2105 customers belonging to the original sample.

[18] This Customer Satisfaction index is built with the factor analysis.

19.This Customer Satisfaction index is built with the factor analysis.

20 This Customer Satisfaction index is built with the factor analysis

REFERENCES

Andersson U., Mudambi R. and Persson M. (2006), Activity Structure and Centralization: Impacts on performance dimensions of inter-unit knowledge, 2006 The Copenhagen Conference on Strategic management (CCSM) organized by the Centre for Strategic Management and Globalization, CBS, Copenhagen, Denmark

Ansari S. and van Neerijnen P. (2006), Capability generation in hyper-competitive environments: Leveraging strong and weak ties to integrate organizational knowledge, 2006 The Copenhagen Conference on Strategic management (CCSM) organized by the Centre for Strategic Management and Globalization, CBS, Copenhagen, Denmark

Askenazy P. (2000), Innovations and employment: evidence from American manufacturing, in Vivarelli M., Pianta N. (eds), The employment impact of innovation. Evidence and Policy,Routledge, London

Baker G., Gibbons, R. And K. Murphy (2002), Relational Contracts and the Theory of the Firm,

Quarterly Journal of Economics, February, 117:1, pp. 39-84

Baron R. M. and Kenny D. A. (1996), The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations, Journal of Personality and Social Psychology, vol. 51, n. 6 pp. 1173-1182

Baron R. M. and Kenny D. A. (1996), The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations, Journal of Personality and Social Psychology, vol. 51, n. 6, pp. 1173-1182

Bartel A. P. (2004), Human Resource Management and Organizational Performance: evidence from Retail Banking, Industrial and Labour Review, vol. 57, n. 2

Bartel A. P., Ichniowski C., andShaw K. L. (2005), How does information technology really affect productivity? plant-level comparisons of product innovation, process improvement and worker skills, NBER, Working Paper 11773, November

Bauer T. K. (2003), Flexible Workplace Practices and Labor Productivity, IZA Discussion paper,

n.700, Bonn Black S. and Lynch L. (2005), Measuring organizational capital in the new economy, IZA Dicussion Paper n. 1524

Bolton R. N. et al. (2006), The effect of Service Experiences over Time on a Supllier's Retention of Business Customers, Management Science, vol. 52 n. 12 pp. 1811-1823

Cabrera A., Collins W. C. and Salgano J. F. (2006), Determinants of individuals engagement in knowledge sharing, International Journal of Human Resource Management, 17:2, February, pp. 245-264

Cabrera E. F. and Cabrera A. (2005), Fostering knowledge sharing through people

management practices, International Journal of Human Resource Management, 16:5, May, pp. 720-735

Canato A. and Corrocher N. (2004), Information and communication technology: organizational challenges for Italian banks, Accounting, Business and Financial History, November, pp. 355-370

Caroli E., Van Reenen J. (2001), Skill-Biased Organizational Change? Evidence from a Panel of British and French establishments, The Quarterly Journal of Economics, CXVI, Issue , 1449-1492

Cohen W. M. e Levinthal D. A. (1990), Absorptive Capacity: A New Perspective on Learning and Innovation, Administrative Science Quarterly, 35, pp. 128-152

Cristini A., Gaj A., Labory S., Leoni R. (2003), Flat hierarchical strcture, bundles of new work practices and firm performance, Rivista Italiana degli Economisti, n.2, agosto

Foss N. J.(2005), Strategy, Economic Organization, and the Knowledge Economy, Oxford University Press, New York

Foss N. J., Laursen K.and Pedersen T (2006), *Organizing to gain from interaction with customers: the role of organizational practices for knowledge absorption and innovation*, 2006 The Copenhagen Conference on Strategic management (CCSM) organized by the Centre for Strategic Management and Globalization, CBS, Copenhagen, Denmark

Garbarino E. e Johnson M. S. (1999), The different roles of satisfaction, trust, and commitment in customer relationships, Journal of marketing, Vol. 63 (Aprile 1999), 70-87

Garicano L. (2000), Hierarchies and the Organization of Knowledge in Production, Journal of Political Economics, Vol. 108(5), pp. 874-904, October

Greenan N. (1996), Innovation technologique, changements organisationnels et evolution des competences: une étude empirique sur l'industrie manufacturiére, Economie et Stetistique, vol. 8, n. 298, pp. 15-33

Griffith R. et al. (2006), Why is productivity so dispersed?, Oxford Review of Economic Policy, vol. 22 n. 4 pp. 526-538

Hair J.F. et al. (1995), Multivariate Data Analysis with Readings - fourth edition, Prentice Hall International Editions, Eglewood Cliffs, New Jersey

Hamilton B. H., et al. (2003), Team Incentives and Worker Heterogeneity: An Empirical Analysis of the Impact of Teams on Productivity and Participation, Journal of Political Economy, III(3), pp. 465-497

Hill N., Brierley J., Macdougall R.(2003), How to measure Customer Satisfaction, Gower,

Hampshire, England Hox J. (2002), Multilevel Analysis - Techniques and Applications,

Lawrence Erlbaum Associates,Publishers, Mahwah, New Jersey, USA

Hunter L. W. et al. (2001), It's not just ATMs: Technology, Firm Strategies, Jobs, and Earnings in Retail Banking, Industrial and Labour Relations Review, Vol. 54, n. 2A, extra issue, March, pp.402-424

Ichniowski C., Shaw K., Prennushi G. (1997), The Effects of HRM Systems on Productivity: A Study of Steel Finishing Lines, American Economic Review, 87, 291-313

Jackson J.E. (1991), A users' guide to Principal Components, John Wiley & Sons, New York

Johnson R.A. and Wichern D.W. (1992), Applied Multivariate Statistical Analysis - third edition, Prentice Hall International Editions, Eglewood Cliffs, New Jersey

Jones D. C. et al. (2006), Human Resource Management Polices and Productivity: New Evidence from an Econometric Case Study, Oxford Review of Economic Policy, vol. 22 n. 4 pp. 526-538

Keltner B. and Finegold D. (1996), Adding Value in Banking: Human Resouce Innovations for Service Firms, Sloan Management Review, Fall, pp. 57-68