

**Quality in bank service encounters: Assessing the equivalence of customers' and  
front-line employees' perceptions**

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## **Quality in bank service encounters: Assessing the equivalence of customers' and front-line employees' perceptions**

**Purpose:** The paper discusses the need to evaluate perception-based quality in service encounters. It sets out to diagnose potential mismatches in how customers and front-line employees perceive quality in high involvement service settings, based on the premise that any initiatives towards quality enhancement in service encounters is advisable only when employees and customers evaluate quality utilizing common perceptual structures.

**Design/methodology/approach:** The study utilizes invariance analysis. The survey involved 165 bank branches and 1522 respondents (463 front-line employees and 1059 customers) and operationalized the same set of questions for both groups of participants. Multisample Confirmatory Factor Analysis tested a series of measurement models.

**Findings:** Results revealed equivalence for tangibles, responsiveness, and assurance but also mismatches between customers and front-line employees perceptions of reliability and empathy.

**Practical implications:** Findings add to current knowledge of how both groups of participants evaluate quality in service encounters and are discussed with reference to managerial consequences for perception-based quality mismatches.

**Originality/value:** So far only a few studies have simultaneously examined front-line employees' and customers' perceptions of service quality in service encounters. Unlike previous research designs, this study addresses the critical aspect of potential mismatches in how customers and employees perceive service quality, and presents a methodological procedure to detect them.

**Keywords:** service encounters; perceptions; invariance analysis; service quality

**Article Classification:** Research paper

## 1. Introduction

Bank services are an important part of the services industry (Mishkin, 2007). In line with the integrated global banking environment, many regulatory, structural and technological changes have taken place within the global banking industry (Angur *et al.*, 1999; Ladhari, 2009). Banks are expanding across borders, offering a diverse portfolio of competitive services and restructuring their services in order to meet the changing needs of customers (Arasli *et al.*, 2005). Over the years, service quality has been increasingly recognized as a key strategic value for service organizations (i.e. Agus *et al.*, 2007; Arasli *et al.*, 2005; Gounaris *et al.*, 2003; Guo *et al.*, 2008; Kersten and Koch, 2010; Kumar *et al.*, 2009; Kuo *et al.*, 2009; Kyoonyoung Yoo and Ahn Park, 2007; Lin and Wang, 2006; Seth *et al.*, 2005). In this vein, service managers realize that to successfully leverage service quality as a competitive edge, actions should not be limited to developing and monitoring objective measures of the technical aspects of quality (Brooks & Hestnes, 2010; González *et al.*, 2008) but should also focus on correctly assessing how customers perceive service quality (Abdullah *et al.*, 2011; Lassar *et al.*, 2000; Rha, 2012; Zeithaml, 1988). As Chase and Dasu (2001, p. 84) postulate, “Ultimately, only one thing matters in a service encounter—the customer’s perception of what occurred”.

Nevertheless, service encounters are dyadic in nature (Solomon *et al.*, 1985); front-line employees are particularly important to the service experience of the customer. Moreover, the existing research reports a positive relationship between the perceptions of front-line employees and customers regarding service quality (Burke *et*

*al.*, 1996; Schneider *et al.*, 1998; Schneider *et al.*, 1996; Schneider and Bowen, 1995), suggesting that employee surveys of service quality are valid reflections of customers' relative perceptions (Schneider *et al.*, 1996).

Interestingly, up until now, most research in service quality prioritized understanding either service providers' or customers' perspectives while only a few studies attempted to delineate it in a service encounter context (for example see Chow-Chua and Komaran, 2002; Dedeker, 2003; Peiró *et al.*, 2005; Svensson, 2006; Svensson, 2002). These studies operationalize applications that examine perceptual differences on mean score ratings from employees and customers, taking for granted that these parts of the service encounter share a common perceptual pattern of service quality. Yet, perceptual mismatches may exist.

Taken together, this study seeks to investigate potential perceptual invariance configuration of perceived service quality for both employees and customers in bank encounters. In particular, we examine equivalency of factorial structure for the SERVPERF measurement model with respect to the relationships among latent variables (i.e. perceived quality and five dimensions), as well as between latent and observed variables (i.e. five dimensions and their twenty-two measured items). In doing so, we utilize Multisample Confirmatory Factor Analysis (MCFA) in first and second-order structures to examine and evaluate service quality within bank encounters as perceived by first-line employees and customers not only at an aggregate level but also at an item/attribute level. As researchers note, conducting validity assessments of the instruments used to measure attitudinal quality are critical in order to reach reliable conclusions (i.e. Carman, 1990; De Chernatony *et al.*, 2004).

From a theoretical perspective, this study builds upon the work of Schneider and Bowen (1985), Bitner *et al.* (1994), as well as Brady and Cronin (2001) to extend

current knowledge of how the two groups involved in service encounters evaluate distinct facets of quality in a shared service experience. An understanding of potential matches and mismatches in front-line employee and customer perceptions would offer a more holistic view of the service quality produced. From a practical perspective, evidence suggests that service quality mismatches in service encounters may affect service production, delivery, and consumption, and in turn the customers' overall service experience (Weiermair, 2000). Thus, the findings of this paper could serve as a starting point for evaluating perceived service quality in bank encounters, helping bank managers recognize the aspects of quality that are cornerstones for both internal and external customers.

## **2. Literature Review**

### *2.1 Service encounters*

Services are produced, distributed, and consumed in an interactive process between the service provider and the service receiver (Svensson, 2006, 2004), stressing the need to understand service encounters. Service encounters involve both human and non-human interactions (Meuter *et al.*, 2000), encompassing all aspects of the service firm with which the customer may interact, including personnel, physical facilities and other tangible elements, during a given period of time (Bitner *et al.*, 1990; Ghobadian *et al.*, 1994; Jun and Cai, 2001).

Previous research in the service sector has established a positive correlation between the perceptions of service quality of front-line employees and customers (Hee Yoon *et al.*, 2004; Jeon and Choi, 2012; Salanova *et al.*, 2005; Tax *et al.*, 1998; Wu *et al.*, 2015). In this vein, evidence suggests that the way that employees experience their work environment is reflected in customers' perceptions of service

quality (Bitner et al. 1994; Maxham III *et al.*, 2008; Schneider and Bowen, 1985). As Schneider and Bowen (1993, p. 39) note, these similar perception are “a consequence of the psychological and physical closeness that exists between employees and customers in service encounters”, arguing that “the key to managing the customer's experience of service quality is to manage employees' experiences within their own organization”.

Other than Schneider and Bowen (1993; 1985), who conducted their studies among front-line bank employees and customers, other researchers have offered similar evidence for the banking sector. For example, Gounaris and Boukis (2013) concluded that strong similarities in the perceptions of the groups involved in the service encounter exert a positive influence on customers' repurchase intentions. Similarly, research indicates that when employees understand the mindset of customers, several benefits can be realized; employees are more likely to display greater engagement, customers receive better services, and the organization has increased performance (George and Hegde, 2004; Myrden and Kelloway, 2015; Papasolomou-Doukakis, 2002; Plakoyiannaki *et al.*, 2008; Ulrich, 1991).

Nevertheless, as Chandon *et al.* (1997) and Rhee and Rha (2009) note, front-line employees often fail to accurately assess customer perceptions of specific quality attributes. Investigating studies on employee-customer service perceptions in the banking sector, Johnson (1996) and Yavas (2006) concluded that those involved in service encounters' do not place the same value on service quality dimensions. Therefore, gaining an in depth understanding of how both parties perceive service quality necessitates focusing on how each perceived distinct facets of service quality (Huang, 2008; Jogleux, 2006; Najjar and Bishu 2006; Rohini and Mahadevappa,

2006). As a consequence of the above contrasting findings, this study sets out to check the following hypothesis:

H<sub>1</sub>: Front-line employees and customers share perceptions of service quality.

## *2.2 Measuring Service Quality*

Research incorporates numerous instruments to measure service quality. Other than SERVQUAL (Parasuraman *et al.*, 1988; 1985) and SERVPERF (Cronin and Taylor, 1992) which are the most widely accepted (Al Khattab and Aldehayyat, 2011; Vera and Trujillo, 2013), various industry specific alternatives have emerged. In the banking sector, these are the BANKSERV of Avkiran (1994), the SYSTRA-SQ of Aldlaigan and Buttle (2002), the BSQ of Bahia and Nantel (2002), the CARTER model of Othman and Owen (2001) and finally BANKZOT (Nadiri *et al.*, 2009).

In line with those scholars who argue that the measurement of expectations does not necessarily offer appropriate information when estimating service quality (i.e. Ali *et al.*, 2015; Chiou and Droge, 2006; Cronin and Taylor, 1992; Dagger *et al.*, 2007), BANKSERV, BANKZOT, and SYSTRA-SQ were not considered appropriate choices. Concerning the rest of the industry specific measurement scales, to a greater or lesser extent they both have reliability and validity issues, as the CARTER model has been designed only for the Islamic banking industry while BSQ has been entirely based upon opinions of experts and has a rather unstable factorial structure (Bahia and Nantel, 2000). Adjusted to the particularities of the service context of a bank, the aforementioned instruments relate - more or less- to the items and the key service quality dimensions (tangibles, reliability, responsiveness, assurance, and empathy) comprising SERVQUAL and SERVPERF. Taken together, and given that SERVPERF has been reported to produce higher adjusted  $R^2$  values compared to

SERVQUAL's gap scores (Kettinger and Lee, 2005), and also remains a standard and compact measure that has been quite recently used in the banking industry (Culiberg and Rojsek, 2010), we chose it as the measurement tool to test our hypothesis. As such, adjusting H1 in the SEVPERF instrument, we aim to test whether:

H<sub>1a</sub>: There is equivalence in perception of service quality dimensions designated by SEVPERF between front line employees and customers.

H<sub>1b</sub>: There is equivalence in perception of distinct aspects of service quality (indicators) designated by SEVPERF between front line employees and customers.

### **3. Method**

The study incorporates double source data to measure the quality of the service encounter. The same questionnaire was used for both customers and front-line employees, allowing a comparative analysis of their responses. The research objectives are examined through MCFA at both first and second order measurement models. Specifically, invariance analysis explored factorial equivalence both at factor (dimensions/latent variables) and indicator levels (items/observed variables). All necessary steps taken are presented below.

#### *3.1 Instrument, Sampling and Data Collection Procedures*

As aforementioned, the study utilized SEVPERF. The methodological steps to enhance content validity and reliability of the research procedure are presented on Table 1. First, the questionnaire was back translated from English to Greek. After the measurement instrument was initially constructed, it was pilot tested on bank front-line employees and customers. The main sampling procedure was conducted based on

the perceptions of 481 front-line employees and 1308 bank customers. Customers were approached outside bank branches after they had received service and every third customer exiting a bank branch was systematically sampled. Questionnaires were coded to reflect only the location of the bank branch and respondents were given the option to drop completed questionnaires in a box or hand them back to the researcher. Field research was carried out at 165 of the 465 available bank branches located in the Thessaloniki greater metropolitan area. The 165 branches included in the research scheme were those that positively replied to our invitation to participate in the research. As a result, 1522 usable questionnaires emerged in total from the two parallel sampling procedures aiming at receiving opinions from customers and employees, meaning that none of the questionnaires were discarded (see Table 1).

Regarding sample size, Hair *et al.* (2010) suggest that models with seven or fewer constructs (latent variables/service quality dimensions) and measured items (observed variables/service quality attributes) with communalities of critical statistical scores below 0.45 indicate a minimum sample size of 300. According to Golob (2003), the initial evaluations of sample size for applying the usual Maximum-Likelihood (ML) technique of structural equation modeling requires that one should have collected as many responses as 15 times the number of observed variables. The questionnaire that was put in use in this study has 22 measured items, indicating that a sample size of minimum 330 cases would be necessary to apply the ML technique successfully. Since our intention was to collect responses from the two distinct groups of participants involved in bank encounters, the minimum sample size should separately apply to both groups. Consequently, the responses collected from bank customers and employees (1059 and 463 respectively) are considered more than satisfactory for conducting our analysis.

MCFA was performed using AMOS 16 software on the 22-item SERVPERF model. The maximum likelihood estimation (ML) was employed in analysis with a sampling ratio of 10:1 or even better 15:1 to the number of observed variables (Hair et al., 2010). The sample size condition was met in this study with an overall ratio 1522:22 or 69.18:1. Moreover, group-ratios were 48.13:1 (1059:22) and 21.05:1 (463:22) for customers and employees, respectively. Consequently, sample size requirements were met.

**Table 1** Research Procedure: methodological steps

<b>Research stage</b>	<b>Research action</b>
Literature Review →	<ul style="list-style-type: none"> <li>• Research on service perceptions measurement scale items</li> <li>• SERVPERF dimensions and measurement items</li> </ul>
Initial Questionnaire Development →	Results from literature review and measurement items were translated in Greek
Pilot Study →	Questionnaire was tested on 40 undergraduate business administration students having the role of Bank customers, while it was also tested on 6 graduate executive MBA students working in banking sector
Final Questionnaire Development →	Comments and changes resulted from pilot study were taken into account
Data Collection →	1522 usable self-administered questionnaires (1059 customers and 463 employees) at 165 out of 465 bank branches of Thessaloniki greater metropolitan area (both groups randomly selected)
Data Analysis →	<ul style="list-style-type: none"> <li>• Tests for response bias</li> <li>• Missing Values Analysis (MVA) using SPSS</li> <li>• Multisample Confirmatory Factor Analysis (MCFA) between groups (invariance analysis)</li> <li>• Multi-group moderation on second-order (SERVPERF) model</li> </ul>

### 3.2 Data analysis

The data analysis procedures are presented step-by-step on Table 2.

**Table 2** Major steps in data analysis

<b>Steps</b>	<b>Purpose</b>
Data Handling	<ul style="list-style-type: none"> <li>• Data input and coding</li> <li>• Missing Values Analysis with Expectation-Maximization Technique (EM)</li> </ul>
Descriptive Analysis – Scale Reliability and Validity	<ul style="list-style-type: none"> <li>• Characteristics of sample</li> <li>• Overall data quality</li> </ul>
Measurement Models Testing	<p>Multisample Confirmatory Factor Analysis (MCFA)</p> <p><i>First-order measurement model</i></p> <ul style="list-style-type: none"> <li>• Configural invariance</li> <li>• Metric Invariance</li> <li>• Construct reliability and validity measures</li> </ul> <p><i>Second-order measurement model</i></p> <ul style="list-style-type: none"> <li>• Configural invariance</li> <li>• Metric Invariance</li> <li>• Scalar Invariance</li> </ul>
Pairwise Comparisons	<ul style="list-style-type: none"> <li>• Critical Ratios Differences</li> <li>• Goodness-of-Fit-indices</li> <li>• Standardized regression weights (beta coefficients)</li> </ul>
Model Explanatory Value	<ul style="list-style-type: none"> <li>• Total coefficients of determination TCD (<math>R^2</math>)</li> </ul>

The study utilized a post-data collection technique to examine potential response bias (Cohen, 1988). Results indicated non-statistically significant differences at 0.05 level of significance, suggesting that response styles have not biased the data.

Little's MCAR test (Little, 1988) for missing values analysis (MVA) has revealed that any data in our analysis are missing completely at random, since corresponding  $H_0$  cannot be rejected ( $\chi^2=135.499$ ,  $df=151$ ,  $Sig.=0.812$ )(Garson, 2012; Olinsky *et al.*, 2003).

MCFA has been applied at first and second-order factor models (Malhotra, 2004; Hair *et al.*, 2010). The criterion for implementing second-order factor analysis is the formation of SERVPERF model theory itself. Previous research suggests that three stages of invariance analyses are most appropriate for testing measurement models: configural, metric and scalar invariance (Horn *et al.*, 1983; Milfont and Fischer, 2010; Rutkowski and Svetina, 2014; van de Schoot *et al.*, 2012).

The first-order measurement model has undergone two of the measurement invariance tests: configural and metric (Hair *et al.*, 2010). Establishing metric invariance for the first-order measurement model enables testing for full measurement invariance of the second-order measurement model, i.e. the SERVPERF model. In this case the second-order model has been tested for full and then partial measurement invariance between customers and employees. Finally, to ratify the results of the step-wise  $\chi^2$  invariance tests procedure, the 'Critical Ratios for Differences' technique supported by AMOS software has been employed, thus providing an aggregate view of the statistically equivalent, as well as different latent and observed items included in the SERVPERF instrument.

Concerning reliability and validity, a series of diagnostic measures were calculated in order to ensure the good standing of the summated scales. Furthermore, it was important to evaluate scale reliability with composite reliability measures, as well as convergent and discriminant validity. The aim of re-assessing those measures is to ensure dimensionality of the model representing proposed measurement theory. Next, some technical issues concerning model fit statistics and invariance analyses are explained. In this study, the following fit statistics were applied (Hair *et al.*, 2010; Reisinger and Mavondo, 2007; Vijayakumar, 2007): Normed chi-square ( $\chi^2/df$ ), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI),

Tucker-Lewis Index (TLI), Parsimony Normed Fit Index (PNFI) and Standardized Root Mean Residual (SRMR) for both first and second-order factor models, as indicated on Table 3.

**Table 3** Tests for Data Analysis

Criteria for reliability and validity of multiple-item scales	Coefficients Cronbach's alpha (Internal Consistency)	Criteria $\geq 0.70$ (George, 2003) $\geq 0.60$ (Robinson et al., 1991) $\geq 0.70 \div 0.60$ (Hair et al., 2010)
	Composite Reliability (CR)	$\geq 0.60$ (Bagozzi and Kimmel, 1995)
Model fit indices and corresponding criteria	Model Fit Indices Normed Chi-Square	Criteria $\chi^2 / df < 5$
	Root Mean Square Error of Approximation	$0.05 < RMSEA < 0.08$ (acceptable fit) $RMSEA < 0.05$ (good fit) $RMSEA < 0.07$ (good fit) (CFI > 0.90)
	Comparative Fit Index	CFI > 0.90 (acceptable fit) CFI > 0.95 (good fit)
	Parsimony Normed Fit Index	PNFI > 0.60 (acceptable fit)
	Tucker-Lewis Index	TLI > 0.90 (good fit)
	Standardized Root Mean Residual	SRMR < 0.08 (CFI > 0.92)
	Indices for Nested Models Comparisons	Criteria for Invariance
Model fit indices and corresponding criteria for invariance check	Chi-square difference statistic per $\Delta df = 1$	$\Delta \chi^2 < 3.84$ for $p < 0.05$ or $\Delta \chi^2 < 6.63$ for $p < 0.01$

## 4. Results

### 4.1 Reliability and Validity

Cronbach's alpha coefficients calculated for SERVPERF dimensions indicate satisfying levels of reliability for the two sub-populations of bank services encounters (Table 4). Factor loadings vary between 0.518 and 0.944, implying high levels of convergent validity for each group (Hair et al., 2010).

**Table 4** Means, Standard deviations, and internal consistency of the scales

Construct	Item	Mean (SD)		Cronbach's $\alpha$	
		Cust.	Empl.	Cust.	Empl.
1. TANGIBLES				0.813	0.711
	Up-to-date equipment and instrument facilities of your bank (Tan1)	5.48 (1.24)	5.58 (1.56)		
	Bank's physical facilities are visually appealing (Tan2)	5.20 (1.32)	5.05 (1.33)		
	Employees of your bank are well dressed and appear neat (Tan3)	5.68 (1.26)	5.61 (1.16)		
	The appearance of the physical facilities of the bank are in keeping with the type of services provided (Tan4)	5.10 (1.36)	5.14 (1.43)		
2. RELIABILITY				0.770	0.890
	If Bank has promised to do something by a certain time, it will do so (Rel1)	5.27 (1.37)	5.33 (1.14)		
	Bank is dependable (Rel2)	5.75 (1.24)	5.91 (1.07)		
	Bank provides its services at the time it promises to do so (Rel3)	5.39 (1.27)	5.15 (1.27)		
	Bank keeps its records accurately (Rel4)	5.56 (1.29)	5.64 (1.16)		

	Bank performs the service right at first time (Rel5)	4.61 (1.71)	5.65 (1.13)		
3. ASSURANCE				0.812	0.895
	When customers have problems, Bank is sympathetic and reassuring (Ass1)	4.89 (1.50)	5.51 (1.23)		
	Clients can trust employees of their Bank (Ass2)	5.29 (1.42)	5.77 (1.11)		
	Customers feel safe in transactions with their Bank (Ass3)	5.45 (1.37)	5.59 (1.20)		
	Bank employees are polite (Ass4)	5.80 (1.27)	5.78 (1.09)		
4. RESPONSIVENESS				0.747	0.857
	Bank provides prompt service to the customers (Res1)	4.79 (1.74)	5.39 (1.22)		
	The bank employees are always willing to help customers (Res2)	5.02 (1.74)	5.17 (1.26)		
	Banker replies in any query of the customers (Res3)	4.72 (1.72)	5.15 (1.26)		
	The banks tell the customer exactly when the service will be performed (Res4)	4.70 (1.70)	5.03 (1.36)		
5. EMPATHY				0.751	0.865
	Employees get adequate support from Bank to do their jobs well (Emp1)	5.08 (1.26)	5.38 (1.25)		
	Bankers give individual attention to the customers (Emp2)	4.72 (1.74)	4.79 (1.49)		
	Bankers try to know what customers' needs are (Emp3)	4.26 (1.73)	5.21 (1.22)		
	The bank has customers' best interests at heart (Emp4)	4.09 (1.78)	4.70 (1.45)		
	The bank has operating hours convenient to all their customers (Emp5)	4.07 (1.87)	5.20 (1.51)		

Note: "Cust." stands for Customers and "Empl." stands for Employees.

Again, at the confirmatory factor analysis stage, the total sample reflects the two main groups involved in bank encounters: customers and front-line employees. Tables 5 and 6 include reliability, convergent and discriminant validity measures. Results show that none of reported rules are violated, thus supporting the measurement model structure depicted in Figure 1.