



A typology analysis of service quality, customer satisfaction and behavioral intentions in mass services

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Abstract

Purpose – This paper aims to investigate the possibility that the typology of a service as well as the operationalization of the service measurement scale may determine the nature of the service quality (SQ) construct and its relationship with those of customer satisfaction (SAT) and behavioral intentions (BI).

Design/methodology/approach – The study utilized the service classification scheme developed by Schmenner and concentrated on the mass service category as an example to illustrate the concept with data from retail banking.

Findings – Confirmatory factor analysis indicated that “Responsiveness,” “Tangibility,” “Reliability,” “Knowledge,” and “Accessibility” dimensions contribute significantly to service quality. It was further observed that SAT fully mediates the impact of SQ on BI.

Research limitations/implications – A notable limitation is that the present study focuses only on mass service and uses only one industry (retail banking) to illustrate the findings. Future research should examine other service categories.

Practical implications – Service managers in the mass service category are recommended to devise operations and marketing strategies that focus on the SQ dimensions which can enhance customer satisfaction and, in turn, foster positive behavioral intentions.

Originality/value – This study presents a methodology for developing an operationizable service quality construct. It demonstrates that SQ, SAT and BI and their interrelationships may be typology-specific. Thus, two or more industries may exhibit similar relationship characteristics with regard to these constructs, if they belong to the same service category. This knowledge can lead to inter-industry benchmarking of best practices that can lead to better customer satisfaction and behavioral intentions.

Keywords Customer services quality, Customer satisfaction, Consumer behaviour, Factor analysis, Service industries

Paper type Research paper

Introduction

Over the past 40 years, several authors have attempted to develop coherent classification schemes for services. The intent of such schemes is to bring parsimony and order allowing for a better understanding of the characteristics that differentiate services and the organizations that provide them. The keen interest to understand



these services springs from several reasons. First, the proportion of US workers employed in the service sector has gone from about 30 percent in the early 1900s, to 50 percent in 1950, and to about 80 percent today (CIA, 2004; Fitzsimmons and Fitzsimmons, 2004). Second, research in the service discipline has grown tremendously in the past decade. For example, for the last six years each of the annual conferences of the Decision Sciences Institute has dedicated tracks for service management. Also, the National Science Foundation (NSF) has now included a research program called “Service Enterprise Engineering (SEE)” (www.nsf.gov). Third, some service firms that were identified 20 years ago (according to some noted characteristics that they possessed) to be on the upper left section of the service-process matrix (i.e. with relatively high productivity/profitability) are still leading their industries in productivity and profitability (Schmenner, 1986, 2004). Noticeable examples are Southwest Airlines, Wal-Mart, McDonald’s, and Home Depot. Surely therefore, any classification scheme that provides deep insights to understand such performance better will also help in understanding service quality (SQ) and how it affects customers’ behavioral intentions (BI). Consistent with this direction, there is an increased interest in understanding such important constructs as SQ, customer satisfaction (SAT), and BI (e.g. repeat business, recommending the service).

In Schmenner’s (1986, 2004) classification work, the typology to which a company belongs is used to provide some explanations for productivity performance. In this paper, we investigate the possibility that the typology of a service as well as the operationalization (or otherwise) of the service measurement scale may determine the SQ construct and its relationships to the SAT and BI constructs. The study presented here is exploratory in nature. We began our exploratory work by using the service classification scheme developed by Schmenner (1986, 2004), and concentrated on mass service as an example. We illustrate the concept with data from retail banking. Based on Schmenner’s classification scheme and the challenges that he poses to service managers, we posit that these challenges will also indicate the nature of the SQ construct and probably its relationship with other key constructs (e.g. SAT and BI). The remaining sections of the paper will address the conceptual foundations, research methodology, data collection, data analysis, discussion of results, and managerial implications.

Conceptual foundations

For services, the process is the product. Thus, a reason for classifying services is to provide a better understanding of these processes.

Service typology

Issues related to SQ have both marketing and operations orientations (Cook *et al.*, 1999; Fitzsimmons and Fitzsimmons, 2004; Kellogg and Chase, 1995; Lovelock, 1983; Mills and Marguiles, 1980). Therefore, there is a need to explore classification schemes (encompassing both orientations) that may assist in understanding the nature and dimensionality of the SQ construct under different typology settings. In this respect, the classification scheme suggested by Schmenner (1986, 2004) appears to be attractive.

In his earlier work, Schmenner (1986) divided the landscape of services into four quadrants framed by labor intensity on the *y*-axis and customer contact/customization on the *x*-axis. Labor intensity is defined as the ratio of labor cost incurred to the value

of the plant and equipment. Thus, a high labor-intensive service business involves relatively little plant and equipment cost, but a considerable labor time. On the other hand, the customer contact/customization axis consists of a joint measure of customer contact (the degree to which customer interacts with the service process) and customization (the degree to which the service is customized for the customer).

The axes of Schmenner's classification have been criticized for various reasons. Some authors emphasized that interaction and customization may not always act in the same direction; and productivity, not labor intensity (capital-labor ratio), may be a better dynamic driver for the service process (Collier and Meyer, 1998; Kellogg and Nie, 1995; Tinnila and Vepsäläinen, 1995). Consequently, a more recent work by Schmenner (2004) has replaced those axes. Degree of variation in the customization and interaction replaces customization axis; and relative throughput time (a measure of productivity) replaces labor intensity axis. Relative throughput time appears to be a better driver for the *y*-axis, because the important factor is not labor (or capital) intensity, but how quickly a service encounter can be rendered relative to others in the industry. In the same vein, from the operation's standpoint, the degree of interaction with and customization for the customer translates into variation in the provision of a service (Schmenner, 2004). For detailed justification of this issue, the reader is referred to Schmenner (2004). In any case, this system classified services into four quadrants:

- (1) *Service factory* – low relative throughput time, low degree of variation (e.g. airlines, express service trucking, hotels, resorts and recreation).
- (2) *Service shop* – low relative throughput time and high degree of variation (e.g. hospitals, traditional restaurants (excluding fast food), auto and other repair services).
- (3) *Mass service* – high relative throughput time and low degree of variation (e.g. retail banking, schools, wholesaling, and traditional long-distance ground trucking).
- (4) *Professional service* – high relative throughput time and high degree of variation (e.g. law firms, accounting firms, medical clinics).

SQ construct in the mass service

Using this process matrix, Schmenner presented the challenges that the managers from the industries in each quadrant could face. The managerial implications of Schmenner's (1986, 2004) classification can be used to predict the nature of the SQ construct and provides support for the need to put the SQ construct into operation.

Schmenner (1986) classified the retail banking industry as a mass service. Mass service industries have a low degree of variation in customer interaction/customization. Mass service firms face several challenges including the problem of making their services "warm" or responsive (dimension of SQ), developing innovative marketing practices to attract and retain customers (SAT/customer relationship management), and paying attention to physical surroundings (the tangible dimension of the SQ construct). These firms are also faced with managing a fairly inflexible workforce and work procedure hierarchy with the need for standard operating procedures that ensures correct and reliable service delivery (knowledge and reliability dimensions). Schmenner (1986) also suggested that in a mass service, constant attention is needed in the employee hiring and training process to ensure that "wastes" in the service delivery process do not slow down the throughput time. "Wastes" can occur if the documentations (e.g. receipts, bank transaction records, information on

interest rate of mortgage or loans) are inaccurate, if the products (e.g. special interest rates on CD, savings accounts) are not available on the shelf (i.e. needs to be ordered or configured specially), or facility locations (e.g. bank/ATM locations) are not convenient or in easily accessible points in certain geographical areas, etc. All these issues translate to quality dimensions such as reliability, accessibility, and responsiveness.

Need to operationalize the SQ construct

In order to have a practical utility, a SQ construct should not only be operational (non-global), but also context specific. Lapierre's (1996) study, for example, provided an alternative set of operational measures to those given by Parasuraman *et al.* (1988, 1993, 1994). Operationalization of the SQ construct attempts to link the conceptual definition of SQ to its empirical indicators. The premises are based on Lapierre's (1996) observations:

- SQ research is critically dependent on the quality of the operational measures;
- given the nature of service, the search for universal conceptualization of SQ may be futile; and
- the construct measurements are as important as the examination of substantive relationships.

Context specificity of the SQ constructs

In the present paper, we propose that the context specificity is not necessarily the industry, but rather it is the typology of service. Several concerns have been raised regarding the possibility that the typology of service (context specificity) may explain some discrepancies in the results of past research regarding the nature and dimensions of the SQ construct. First, would the dimensions of the performance-only construct (SERVPERF) replicate the SERVQUAL's five dimensions? Second, which dimensions of SQ will be dominant in each service context (e.g. in mass service), given that the measurement items have been operationalized (Lapierre, 1996)? For example, as explained above, the managerial implications presented in Schmenner's (1986, 2004) service classification scheme suggest and predict the dimensions that will likely be dominant in the mass service context are:

- "Tangibility" (includes the physical facilities, equipment, and appearance of personnel).
- "Responsiveness" (the willingness or readiness of employees or professionals to provide service targeted to customers' specific needs).
- "Knowledge" (the knowledge and competence of service providers, possession of necessary skills, etc.).
- "Accessibility" (the service provider's ability – through its location, operating hours, employees and operational systems – to design and deliver the service capable of adjusting to the demands and wishes of customers in a flexible way).
- "Reliability" (the degree to which customers can rely on the service provider to keep promises and perform with the best interests of the customers).

Notably, what is not expected to be a dominant dimension is "Recovery" (the degree to which service providers actively take corrective actions when something goes wrong or something unexpected happens in the service delivery process). As pointed out by Miller *et al.* (2000), drivers to service recovery include those in the pre-recovery phase:

customer loyalty, service guarantee, severity of failure, and customer loyalty. The second phase (speed of recovery, frontline discretion, apology/empathy shown, and tangible – product return/fair fix) addresses the training and discretion available to the frontline employees to respond to a service failure. The final phase, the follow-up of the service recovery, is to encourage the customer to return. Notably, “owing to the contingent nature of service failures, appropriate reactions by service personnel at such moments are critical to secure favourable customer perceptions” (La and Kandampully, 2004, p. 392). As such, those service recovery drivers may not be systematically effective in retail banking possibly because the measurement items in other SQ dimensions (such as “Responsiveness” and “Reliability”) may have captured the concept of service recovery. Furthermore, service recovery itself is not sufficient for optimal SAT in most industries in the mass service category. This discussion leads us to our first proposition:

- P1.* In the mass service, the dominant dimensions of SQ will include: “Tangibility,” “Responsiveness,” “Reliability”, “Knowledge”, and “Accessibility”. The “Recovery” dimension will not play a dominant role.

The dimensions used in this study as well as the items included in each dimension are shown below:

(1) *SQ*:

- The bank is clean (Tangibles, T1).
- Interior design is attractive (T2).
- The bank facilities are up-to-date (T3).
- The employee’s appearances are neat (T4).
- The lobby area is comfortable (T5).
- The parking space is adequate (T6).
- Facility maintenance appears adequate (T7).
- The employees are courteous (Responsiveness, RES1).
- The employees give us special attention (RES2).
- Our requests are handled promptly (RES3).
- The employees adapt banking services to our needs (RES4).
- Wait times are satisfactory to me (RES5).
- The employees adapt well to handle peak customer traffic (RES6).
- Employees’ knowledge of banking procedures makes me feel comfortable (Knowledge, K1).
- The employees provide adequate information about the banking services (K2).
- The employees are knowledgeable about bank equipment (e.g., computer system and ATM machines) (K3).
- The employees are aware of special product rates (Interest, CD, savings) (K4).
- The employees provide error-free transaction records (Reliability, R1).
- The tellers accurately verify the transaction request (R2).

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- Transactions were posted accurately (R3).
 - Deposits were posted in accordance with funds availability policies (R4).
 - The internet banking system (e.g. telephone/online banking) is easy to use (Accessibility, ACC1).
 - The bank services locations (branches/ATMs) are convenient for me (ACC2).
 - There are sufficient numbers of ATM's outside bank branches (ACC3).
 - Services are accessible to disabled customers (ACC4).
 - Employees are responsive to my concerns or complaints (Recovery, REC1).
 - The employees quickly apologize when service mistakes are made (REC2).
 - The bank clearly advertises a toll-free number for service calls (REC3).
- (2) *SAT*:
- I am satisfied with my decision to use this bank (SAT1).
 - My choice to use this bank was a nice one (SAT2).
 - I think I did the right thing when I chose this bank for its services (SAT3).
 - I feel that my experience with this bank has been enjoyable (SAT4).
- (3) *BI*:
- I would recommend the bank to someone else (RECM).
 - I would continue to use this bank (REPT).
 - I would report any problems I experienced with the bank to the banking industry (RPRT).
 - I consider the bank fees they charged me are adequate (FEES).

These will be discussed in more detail later. However, note that the items are operational measures of SQ in the retail banking industry. For any other industry in mass service, these items may need to be further modified for the measurement to remain operational. While items in the SAT and the BI constructs may be “universal” or “global” across all service contexts, those in the SQ construct should not be.

Interrelationships among SQ, SAT, and BI

Although there seems to be no consensus in the literature on the causal ordering of SQ and satisfaction ($SAT \rightarrow SQ$ or $SQ \rightarrow SAT$), a preponderance of evidence in research literature tends to support the $SQ \rightarrow SAT$ model (see Cronin *et al.* (2000, pp. 195-6) for a comprehensive discussion). Whatever may be the causal ordering of these two constructs (SQ and SAT), many authors conclude that both SQ and satisfaction may have direct links to BI – i.e. $SQ \rightarrow BI$ and $SAT \rightarrow BI$ (Cronin and Taylor, 1992; Cronin *et al.*, 2000; Dabholkar *et al.*, 2000). Opinions are, however, mixed as to whether SQ has a direct relationship with BI in all service contexts. Using the overall sample from six industries (spectator sports, participative sports, entertainment, healthcare, long-distance ground carrier, and fast food), Cronin *et al.* (2000) concluded that there is a significant direct link between SQ and BI. However, when the data for the industries were tested separately, the same authors found that “service quality had a direct effect on consumer BI in four of the six industries with exceptions being the health care and long-distance carrier industries” (Cronin *et al.*, 2000) (Note that in his

latest work, Schmenner (2004) posits that long distance ground trucking industry is a mass service.)

To summarize, the main issue is whether the direct effect of SQ on BI (i.e. $SQ \rightarrow BI$) is significant or not in the context of mass service. In other words, will satisfaction fully mediate the impacts of SQ on BI in mass service (i.e. $SQ \rightarrow SAT \rightarrow BI$)? Since mass service is associated with a low degree of variation in customer interactions/customizations, opportunities for direct customer-employee encounters are relatively few and regimented, which means that $SQ \rightarrow BI$ may not be as important (or even significant) as the indirect effect $SQ \rightarrow SAT \rightarrow BI$. This leads us to our second proposition:

P2. Satisfaction fully mediates the impact of SQ on BI in mass service.

Research methodology and data

Scale development

Similar to the essence of Parasuraman *et al.*'s (1994) approach, the questionnaire items in the present study were generated via a series of focus groups. The first set of focus groups were composed of bank customers consisting of undergraduate students with senior standing. These students were enrolled in a semester course on Management of Service Organizations offered in an AACSB accredited college of business in a university located in a large US metropolitan area. The students were first instructed to develop a service blueprint for a customer seeking various services in a retail bank of their choice. This step was taken in order to give the customers an opportunity to better understand the sequential stages of the service encounter. One additional advantage of this step is to assist the customer to visualize and develop a walk-through-audit (WTA) which traces the experience of a customer and his/her impression of the SQ from the first to the last stage of a service encounter. Finally, the operational definition of the construct of perceived quality (i.e. SERVPERF) was introduced prior to the development of the SQ measurement scale. At this stage, focus group participants were instructed to formulate questions developed via the WTA process in the format of SERVPERF, where questions are grouped under different dimensions (i.e. Tangibility, Reliability, Recovery, etc.). Guided by the focus group moderator (i.e. the course instructor – one of the authors of this paper), the teams were able to reframe, synthesize, and combine the operational items implied in a set of WTA questions using the dimensions from past research (Cronin and Taylor, 1992; Lapierre, 1996; Parasuraman *et al.*, 1988, 1993) along with their definitions of those dimensions. In order to iron out the possible disagreement across teams, small teams were later combined to form one large team where the members could compare notes, deliberate, and reach a consensus of the operational questions and dimensions that they deemed appropriate for the banking industry. A notable advantage of developing an operational SQ questionnaire as described above is that WTA covers essentially all the quality issues a customer may encounter. In addition, knowledge gained from studying the past research ensures that the developed questionnaire can be implemented.

The combined large team reached a consensus on six dimensions they decided were most appropriate for measuring SQ in the retail banking industry. Each question item was rated on a seven-point Likert-type scale ranging from strongly disagree (1) to strongly agree (7). Preliminary versions of this questionnaire were then reviewed by the second focus group consisting of personnel in the quality assurance and SAT division of a regional bank located in a large city in southeast USA. Participants in this

second focus group dealt with the issues raised in the instrument on a daily basis, and thus are familiar with what is needed to measure SQ. The second group subsequently modified the questionnaire. The final revised version (see the list of dimensions above) was then presented to elicit bank customers' experience with SQ in the banking industry. Convenient sampling is used as the surveys were given to customers who patronize various banks. The respondents were contacted through their churches, places of employment, and local organizations. We also selected a small group of college seniors and graduate students to complete the questionnaires.

Similarly, several seven-point Likert-type items (with endpoints strongly disagree/strongly agree) were used to measure SAT and capture customer's BI (see the list of dimensions above).

The sample

Our convenient sample yielded a total of 317 usable questionnaires. All of the survey respondents maintain at least one active account with a particular bank. A total of 66 percent of the respondents were women; 68 percent of respondents visit the bank they evaluated four times or less per month. These visits were mostly for personal services (86 percent personal, 14 percent for business related reasons). Approximately 20 banks located for the most part in three states were evaluated. At least 50 different branches of the banks were evaluated (some branch names were not discernibly distinct from the others, hence the use of the phrase: "at least"). The frequency distribution for annual total income of respondents was as follows: 25 percent less than \$20,000; 29 percent between \$20,000 and \$39,999; 22 percent between \$40,000 and \$59,999; 14 percent between \$60,000 and \$79,999; 10 percent above \$80,000.

Empirical results

Reliability analysis

The sample was randomly split into two groups: S1 with 117 respondents and S2 with 200 respondents. Exploratory factor analysis (EFA) was employed to identify the underlying dimensionality of SQ in retail banking. Specifically, the scree test and the Kaiser (1960) eigenvalue-one criterion were both used to identify the number of factors. If an item in a proposed dimension shows a significant loading (factor loading higher than + 0.4) on more than one factor, then that item is deleted because it does not provide pure measures of a unique construct. Subsequently, the remaining items were subject to factor analysis again. Using S1, this procedure resulted in a five-factor solution, rotated by a Promax algorithm (i.e. an oblique rotation).

In order to assess properly the dimensionality of the SERVPERF scale generated, we ran the EFA again on the bigger sample (i.e. S2), which consists of 200 respondents. An almost identical five-factor structure emerged (see Table I). One advantage of using two separate samples for the EFA is to reduce the likelihood of capitalizing the factors on chance characteristics of the same sample.

The descriptive statistics, Cronbach's alphas and the pairwise correlation coefficients related to our measures are reported in Table II. Most scales had desirable alpha values of 0.90 and above. Because of the relatively lower value of Cronbach's alpha related to the four-item scale of BI (0.71), we examined each of the individual item's contribution to the internal consistency reliability and found that the alpha coefficient could be improved from 0.71 to 0.86 when the complaining item (i.e. I would report any problems I experienced with this bank to the banking industry) was

No.	Responsiveness	Tangibility	Reliability	Knowledge	Accessibility
RES3	0.907				
RES4	0.869				
RES5	0.824				
RES6	0.739				
RES2	0.707				
RES1	0.609				
T3		0.926			
T5		0.827			
T4		0.786			
T2		0.722			
T1		0.688			
R4			1.036		
R3			0.923		
R1			0.633		
R2			0.426		
K2				0.790	
K1				0.716	
K3				0.698	
K4				0.472	
ACC3					0.692
ACC2	0.30				0.609
Eigenvalue	14.518	1.620	1.500	1.214	0.990
Cumulative percent of explained variance	51.852	57.639	62.996	67.330	70.866

Note: Factor loadings less than 0.40 are not shown

Table I.
Factor loadings for the underlying dimensions of service quality

dropped from the scale. Further literature review suggests that this might be explained by the rather complex characteristics of the complaining behavior which by itself is multi-faceted in nature (Zeithaml *et al.*, 1996) and can be categorized into three major groups:

- (1) voice responses (e.g. seeking recovery from the service providers);
- (2) private responses (e.g. negative word-of-mouth communication); and
- (3) third-party responses (e.g. law suits) (Singh, 1988).

As such, the complaining item was deleted and not included in the subsequent analysis. Overall, the values of Cronbach's alpha revealed that all scales had an acceptable internal consistency.

In order to further confirm the five-factor SQ model, a confirmatory factor analysis (CFA) was conducted because this technique provides a more rigorous interpretation of dimensionality than is provided by the EFA. In addition, a CFA can assess the convergent and discriminant validity of the SQ construct. The AMOS (version 5.01) was used as the analytical tool for the estimation of the measurement model.

We assessed two separate measurement models. Specifically, one model focused on the second-order factor of SQ and its associated five dimensions, including responsiveness, tangibility, reliability, knowledge, and accessibility. The other measurement model focused on the latent variables of satisfaction and BI. To assess these measurement models, we reviewed a number of goodness-of-fit indices, including

	Mean	SD	Alpha	Responsiveness	Tangibility	Reliability	Knowledge	Accessibility	Satisfaction	Behavioral intentions
Responsiveness	5.518	1.155	0.917	0.665						
Tangibility	5.712	1.157	0.918	0.769	0.695					
Reliability	5.553	1.230	0.904	0.671	0.650	0.703				
Knowledge	5.481	1.202	0.917	0.816	0.719	0.713	0.746			
Accessibility	5.439	1.477	0.769	0.378	0.389	0.341	0.424	0.643		
Satisfaction	5.582	1.421	0.979	0.603	0.572	0.614	0.624	0.361	0.922	
Behavioral intentions	5.397	1.462	0.863	0.414	0.389	0.428	0.369	0.176	0.680	0.703

Note: The diagonals represent the total amount of variance explained, while the other matrix entities represent the intercorrelations

Table II.
Descriptive statistics,
alpha, and
intercorrelations among
SQ, SAT, and BI

RMSEA, CFI, RNI, TFI and a Chi-square/degree of freedom value. Together, these indices indicated an acceptable fit.

We examined the convergent validity (i.e. the degree of association between measures of a construct) by reviewing the *t* statistics for the factor loadings. In terms of the parameter estimates (factor loadings), the loading items for each factor were set exactly as suggested by the earlier EFA outcome (see Table I). The criteria value used to identify a given loading item is 0.4 or higher. In fact, all items have a loading higher than 0.69 with the highest being 0.97 (see Table III). The fact that all *t* statistics are significant at the 0.01 level showed that all indicator variables provide good measures

Construct and indicators	Standardized loading	<i>t</i> -statistics	Composite reliability
Responsiveness			0.922
RES1	0.751	12.289	
RES2	0.850	14.732	
RES3	0.847	14.674	
RES4	0.914	16.677	
RES5	0.737	11.868	
RES6	0.778	12.876	
Tangibility			0.919
T1	0.791	13.166	
T2	0.797	13.315	
T3	0.898	16.076	
T4	0.889	15.845	
T5	0.786	13.032	
Reliability			0.904
R1	0.800	13.250	
R2	0.862	14.833	
R3	0.874	15.155	
R4	0.815	13.572	
Knowledge			0.920
K1	0.925	17.038	
K2	0.931	17.209	
K3	0.871	15.368	
K4	0.707	11.239	
Accessibility			0.782
ACC2	0.862	10.676	
ACC3	0.737	9.392	
Customer satisfaction			0.979
SAT1	0.943	17.753	
SAT2	0.968	18.633	
SAT3	0.961	18.392	
SAT4	0.968	18.653	
Behavioral intentions			0.875
RECM	0.906	16.433	
REPT	0.913	16.657	
FEES	0.691	10.978	

Table III.
Properties of the
measurement model

to their respective construct (Anderson and Gerbing, 1988). These results generally supported the convergent validity of the model.

We assessed the discriminant validity (i.e. the degree to which items of constructs are distinct) by using the “variance extracted” test. Discriminant validity is satisfied if the variance shared between measures of two different constructs (the squared correlation) is less than the amount of variance extracted by the items measuring each construct. Empirical results (see Table II) indicated that the discriminant validity is achieved in this study.

The relationship between SQ, satisfaction, and BI

To examine *P1*, that the dominant dimensions of SQ include tangibility, responsiveness, reliability, knowledge, and accessibility, we conducted an EFA on both data sets. Our findings indicate that recovery does not emerge as a significant factor in both data sets (see Table I). In addition, our measurement model's results showed that tangibility, responsiveness, reliability, knowledge, and accessibility are significant dimensions of the second-order factor of SQ (see Figure 1). Together, these results lend support to *P1*.

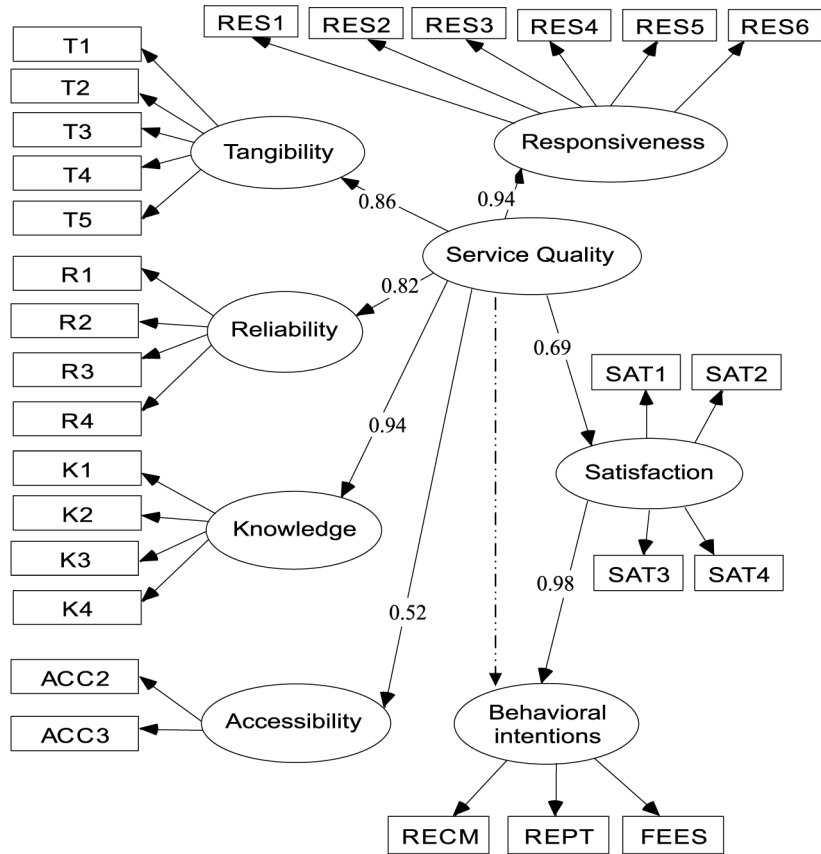
To examine *P2*, we examined the hypothesized casual model as shown in Figure 1. It is noteworthy that the indirect effect of SQ on BI (i.e. $SQ \rightarrow SAT \rightarrow BI$) is so significant as to play down the direct effect of SQ on BI (i.e. $SQ \rightarrow BI$). Interestingly, though the coefficient of $SQ \rightarrow BI$ is insignificant (p -value = 0.69), the directional impact is negative. This is perhaps caused by data co-linearity and/or model misspecification. In terms of model specification, the implication is that it may not be appropriate to specify a direct linkage from SQ to BI in the mass service. This also implies that satisfaction fully mediates the impacts of SQ on BI. Consequently, we re-estimated the LISREL model without the direct path from SQ to BI (i.e. the reduced model in Figure 1). All fit indices related to the reduced model are compatible with the full model. We further employed the chi-squared difference test to compare these models and found that the difference in chi-squared value between these two models was not statistically significant. To the end that keeping the path $SQ \rightarrow BI$ along with $SQ \rightarrow SAT \rightarrow BI$ provides no additional explanation of BI beyond which is given when the path $SQ \rightarrow BI$ is absent, the reduced model was adopted as the final model because of its slightly smaller AIC measure. In brief, it is thought that the reduced model better described the underlying relationship between SQ, SAT, and BI. These results provide support to *P2*.

Discussion and managerial implications

We set out to investigate the possibility that the typology of a service as well as the operationalization (or otherwise) of the service measurement scale may determine the SQ construct and its relationships to the SAT and BI constructs. In other words, two or more industries may exhibit similar relationship characteristics with regards to these constructs if they belong to the same typology and the construct items are operationalized.

Need to operationalize the SQ construct

Service providers' ability to understand and respond to customer needs has been identified as a key contributor to quality successes (Blanchard and Galloway, 1994). In line with this thought, the results of this research point to the need to develop and use



Full Model

Standardized Paths

SQ → SAT = 0.693 (p-value = 0.000)
 SQ → BI = -0.017 (p-value = 0.689)
 SAT → BI = 0.991 (p-value = 0.000)

$R^2(\text{SAT}) = 0.481$; $R^2(\text{BI}) = 0.958$
 Chi-squared/df = 2.082; CFI = 0.97;
 RNI = 0.96; TLI = 0.98; AIC = 895.97

Reduced Model

Standardized Paths

SQ → SAT = 0.692 (p-value = 0.000)
 SAT → BI = 0.979 (p-value = 0.000)

$R^2(\text{SAT}) = 0.479$; $R^2(\text{BI}) = 0.958$
 Chi-squared/df = 2.076; CFI = 0.98;
 RNI = 0.96; TLI = 0.98; AIC = 894.13

Figure 1.
The research model

only operationalizable items in the SQ construct. This result confirms Lapierre's (1996) finding that SQ research is critically dependent on the quality of the operational measures. According to Lapierre, this is important because the construct measurements are as important as the examination of substantive relationships. Thus, the relationships of the SQ construct with SAT and BI may be affected by whether the construct items are operationalized or not. The current study presented a methodology to develop such an operationalizable SQ construct.

One of the serious criticisms against the use of the SERVQUAL scale "as is" relates to its global nature. The outcome of administering the SERVQUAL scale to the consumers of a service is of little utility value for instituting an operational improvement process for the service. The use of the modified Schmenner (2004) service process matrix makes it so apparent and important to operationalize the SERVPERF scale. Recall that the new *y*-axis of this matrix is now named "relative (to the industry) throughput time". Schmenner (2004, pp. 339-41) stated that: "... the matrix also changes to one that examines productivity only ... the diagonal of the matrix merely shows the path to increased productivity where both variation and throughput time are reduced". He further explained the lure to align operations to move up and left along the diagonal of the matrix. Specifically, for companies in the mass service quadrant, such a move translates to removing wastes in the process. This is accomplished by moving up toward the service factory where relative throughput time and variations in customer interaction and customization are low. One implication of the observations by Schmenner is that the items in the SQ scale ought to be operationalized. For one thing, one cannot improve an item that cannot be measured; and one cannot measure an item on the scale if it is not operationalized!

Service typology and the SQ construct

Since different service typologies may emphasize different dimensions of SQ, it is important to know the typology in order to prepare properly the service employees to serve the customers better. As Lapierre (1996) put it, searching for a universal conceptualization of SQ may prove futile. As such, we employed a performance only approach (Cronin and Taylor, 1992) to develop an instrument (by means of the WTA process) suitable for service firms in the "mass service" category.

Using the retail banking industry as an illustrative example for a mass service, six SQ dimensions were captured in the present study. Five of these dimensions were found to be of significant importance to the customers in the mass service, namely: "Tangibility," "Reliability," "Responsiveness," "Knowledge" and "Accessibility". The above dimensions of SQ that dominate in retail banking have been confirmed, in some combination or another, by previous research (e.g. Jamal and Naser, 2002; Levesque and McDougall, 1996; Zhou, 2004) albeit through a different process than that employed in this study.

The "Recovery" dimension was found to play little or no role in the customers' minds as they assess SQ in this mass service setting (retail banking). One explanation for the "Recovery" dimension not being considered "significant" would be survey respondents experiencing a lack of displeasurable service at their current bank. For example, it is likely that many bank customers do not have unforgettable bad experiences with financial service providers. Also, the chances are that, though some bank customers may have experienced an unpleasant banking service with their previous bank, they have been happy with their current banking service since they switched their accounts. Another plausible explanation is that the essence of

“Recovery” dimension may have been somewhat captured by items in the “Responsiveness” dimension (e.g. RES 2: the employees adapt banking services to our needs; RES 3: our requests are handled promptly) and/or the “Reliability” dimension, and thus yield an indistinct outcome. Nevertheless, bank managers should not underestimate the negative impact of service failure, especially when today’s bank customers “are now increasingly prepared to switch providers if better value is available elsewhere” (Farquhar, 2004, p. 88). In fact, a recent survey by Unisys Corp. indicates that nearly half (45 percent) of the more than 1,000 respondents would be very or somewhat willing to switch their accounts to another financial institution that offered better identity theft protection (Swann, 2005). Thus, an accurate investigation of failures and adequate service recovery should always be on bank managers’ checklist. Further research might need to employ other instruments that could help unveil new challenges (e.g. service recovery toward identify fraud victims) requiring attention.

One advantage of the second-order model proposed in the present study is that it provides an opportunity for service providers to analyze customers’ perceptions of SQ at a higher level of abstraction. On the one hand, the second-order model yields direct, actionable information at the attribute level (i.e. individual indicators in each of the first-order factors) for service managers. On the other hand, it allows service managers to assess the contribution of a theoretically important component of the latent construct and their relationship with other related construct (e.g., satisfaction). Longitudinal benchmark comparison with the competing firm(s) on five dimensions of SQ, for example, could reveal patterns not discovered by studying individual items only and, in turn, identify a need for intervention in a specific area (e.g. “Responsiveness”).

Let us now apply this to our illustrative example, retail banking. Among the five important dimensions identified in this study, some are more important than others. The “Responsiveness” and “Knowledge” dimensions seem to be relatively more important than the others (Figure 1). Thus, efforts should be made to signal current and potential bank customers about the quality of these two dominant service factors. A bank might focus its marketing promotion with stories about its knowledgeable management team and courteous frontline employees. Another option might be to explore “permission marketing” by sending customized e-mail newsletters to loyal customers on a weekly or monthly basis. Further, in terms of resource allocation, bank managers may need to concentrate more of their efforts in the quality dimensions that are of more importance to the customers. The “frontline” tellers or loan officers should have immediate access to a FAQ (frequently asked questions) database and they should know how to direct bank customers to the right person if they are not empowered to answer/solve customers’ requests/problems. People asking about availability of CD or home loans should get quick and, ideally, knowledgeable answers that fit their specific needs.

Mediating role of SAT

The results of the present study are in agreement with the service literature: while SQ may have a significant direct impact on BI in some service contexts, SAT acting as a mediator between SQ and BI appears to make the impact of SQ on BI even stronger. Specifically, for the mass service example, our illustrative (retail banking) example suggests that SAT fully mediates the impacts of SQ on BI.

The observation made above reinforces the need for service managers to devise operations strategies that focus on the dimensions of SQ that enhance SAT, which in turn can lead to positive BI. This observation indicates that managers need to monitor SAT constantly and, by extension, the SQ items that may influence SAT.

Let us again apply this to our illustrative example. The headquarters of a national or regional bank can compare results across the various branches they own, or against their competitors. Alternatively, a downsized simple version of a SAT survey can be e-mailed to customers who have recently purchased a service (e.g. CD or home/auto loan). In ranking the branches, the bank can obtain real-time feedback on SAT of the services they provide. Moreover, the bank can trace the customers who gave the highest and lowest possible rating. Doing so would give the bank an opportunity to identify the main sources of satisfaction/dissatisfaction and then act on these factors in a timely manner. By concentrating solely on the most satisfied and the least satisfied customers, the bank could pursue not only the current segmentation strategy, but also that of growth in a possibly more profitable niche financial service segment (e.g. targeting the most satisfied customer segment by introducing a more profitable financial service).

Concluding remarks

We concentrated on the mass service category as an example to illustrate the concept of service classification with data from retail banking. A limitation of the present study is that it focuses only on mass service and uses only one industry (retail banking) to illustrate the findings. Given the exploratory nature of the research, this approach may be justified for the present study. Future research should utilize the methodology for several industries in the mass service quadrant to confirm the service dimensions identified in this study or to further fine-tune the functional dimensions that may be applicable to the mass service category. Also, it would be beneficial to revisit the American SQ perspective by comparing it to the European SQ perspective, in which SQ is evaluated from not only the functional dimension (SERVPERF) but also the technical dimension and service firm's image (Grönroos, 1982, 1990; Kang and James, 2004). Finally, further empirical research needs to investigate the effect of service typology on the nature of the SQ construct and its relationship with SAT and BI in the settings of service shop, service factory and professional service. As such, a comprehensive set of instruments with a specific focus on each of Schmenner's (1986, 2004) classification scheme could be proposed and validated.

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