ANALYSING THE ROLE OF BPM IN DRIVING CUSTOMER SATISFACTION

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ABSTRACT

Achieving high levels of customer satisfaction is a core issue for any business. This paper presents the results of an empirical analysis, based on longitudinal data from a large UK bank on drivers of customer satisfaction. The results indicate that process management is a critical driver of TSQ and a fundamental component for attaining high levels of customer satisfaction. The paper proposes a comprehensive quantitative analysis using the structural equation modelling (SEM) methodology to explore the contribution of factors that drive customer satisfaction especially the role of BPM as a key driver.

INTRODUCTION

In an era of globalisation and industrialization the importance of customer satisfaction has gained the attention of researchers and practitioners alike. This is especially the case in the field of Service Sciences, where many companies are focusing upon service quality improvement issues in order to drive high levels of customer satisfaction.

In a wide and diverse research literature, a number of common factors have been identified as critical drivers of customer satisfaction. The Service Profit Chain, (Heskett et al, 1994) is one of the most widely supported theories of customer satisfaction. In brief, it proposes a positive linear relationship between staff satisfaction, service quality and customer satisfaction leading, ultimately, to profitability. Parasuranam, Zeithmal & Berry, (1985) also recognise the significance of staff satisfaction and service quality as drivers of customer satisfaction in developing their SERVQUAL measurement tool. However, they differentiate the service quality construct distinguishing between functional service quality (doing things nicely) and technical service quality (doing things right). Priority is afforded to functional service quality. More recently, some researchers have suggested that Business Process Management (BPM) may have an important role to play in driving customer satisfaction (Frei et al, 1997, Tsikriktsis and Heineke, 2004). The aim of this research is to empirically explore the drivers of customer satisfaction and, particularly, to assess the contribution of BPM.

The paper is organized in the following sections. Section 2 examines the relevant literature. Section 3 describes the research objectives and gives an overview of the core methodology, Structured Equation Modelling (SEM). Section 4 discusses the findings from the research. Finally, Section 5 offers some conclusions from the research and suggests potential future research directions.

LITERATURE REVIEW

Previous research has indicated that high levels of customer satisfaction are related to the service quality provided through customer interactions (Van der Weile *et al*., 2002, Vilares and Coehlo, 2003).

The specific relationship between employee satisfaction, service quality and customer satisfaction, identified in Heskett et al's (1994) original research into the service profit chain, has subsequently been supported by research across many sectors (Loveman, 1998; Anderson & Mittal, 2000). Voss *et al.* (2004), for example, find that 'employee satisfaction directly affects both service quality and customer satisfaction'. Other researchers focus on the 'satisfaction mirror', reinforcing the idea that business success results from employee

satisfaction are 'reflected' in terms of customer satisfaction (Schlesinger & Heskett, 1991; Norman & Ramirez, 1993).

The growing interest in service quality amongst researchers is due to its significant relationship with the costs, profitability, customer's satisfaction, customer retention, and service guarantee (Sohail, 2003). It has also been identified as a driver of corporate marketing and financial performance (Buttle, 1996). There have been numerous definition of service quality. According to Berry *et al.* (1988) service quality is all about conforming to customer specifications i.e. it is the customer's definition of quality that matters, not that of the management. According to Parasuraman *et al.* (1985) service quality can be defined as the difference between customer expectations of service and perceived service. If the expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs.

This distinction was critical to the development of their SERVQUAL tool which has particular resonance for Service companies, where customers face a greater challenge evaluating quality than in the traditional manufacturing environment. Services are different to goods in three areas:

- Services are *intangible*; as such they are more akin to performances rather than objects
- Services are *heterogeneous*; delivery can vary from provider to provider and customer to customer
- Production and consumption of Services are *inseparable.* Services are not 'manufactured' remotely and then delivered intact to the customer.

As a result, evaluations are not based solely on the outcome of the service, the technical quality; they also involve the process of service delivery or functional quality (Gronroos, 1984).

SERVQUAL has been subject to a number of criticisms (Cronin and Taylor, 1992; 1992; Buttle, 1996). In particular, the priority afforded to functional service quality within SERVQUAL has been subject to challenge. In an investigation into service quality in UK Banking, Newman (2001) reports that effective delivery on 'hard' factors is a necessary pre-condition for overall service quality. 'Where hard quality, especially reliability of service delivery, is low, then 'soft' quality cannot compensate'. Similarly, Lassar *et al.* (2000) in a study of Private Banking customers, find a much stronger relationship between technical quality and satisfaction than functional quality and satisfaction. Nevertheless, SERVQUAL remains the most widely applied measure of service quality today (Sivadas & Baker-Prewitt, 2000). Indeed Woodall (2001) considers that 'service quality has effectively *become* SERVQUAL and vice versa'. However, he goes on to note that a growing number of companies are focusing on process management in order to ensure effective performance on hard quality dimensions.

This thinking builds upon earlier work by Roth and Jackson (1995) who found that 'business process capabilities had a larger impact on service quality than did people capabilities'. Frei *et al.* (1997) also suggest that processes have an important role to play in driving service quality and customer satisfaction. Banks with good, consistent processes, enjoy higher financial performance. Critically, it is the performance of the overall 'basket' of processes, rather than performance of one or two individual processes, which determines satisfaction levels. Similarly, in their investigation into customer satisfaction in US Airlines, Tsikriktsis and Heineke (2004) find that 'reduction of customer dissatisfaction depends upon improvement in process quality.'

The link between customer satisfaction and process enjoys a wider remit in the growing literature exploring the re-birth of business process management. Following the widely reported demise of Business Process Re-engineering, a number of authors are now reporting cases where companies are re-visiting process, albeit from a different perspective. McCormack & Johnson (2001) for example, find that processes are now viewed as 'strategic assets', which require companies to 'take a business process orientation'. Armistead, Pritchard and Machin (1999) consider that processes are a 'generic factor in all organisations', they are simply, 'how things get done.' This emerging focus on process is predicated on the view that it is the horizontal linkages between key activities that impact the customer (Zairi, 1997). Managing these 'end to end' processes is an ongoing requirement if a company is to meet customer requirements. Process capabilities and execution determine critical aspects of the customer encounter such as speed, accuracy etc. Performance on these dimensions form an important part of the customer evaluation of service

A number of questions arise from the literature which underpin this research: (a) What are the key drivers of customer satisfaction? (b) How significant is the role of process management as one of the drivers of customer satisfaction? (c) Does process management drive technical service quality (TSQ)? (d) Is customer satisfaction positively correlated with functional service quality (FSQ), staff satisfaction, and TSQ? (e) Do FSQ and TSQ have positive correlations with staff satisfaction? (f) Which is the best conceptual model to describe these relations? In addressing these questions, the research aims to offer both the practitioner and research communities a better understanding of the critical components, and their relative significance, for attaining high levels of customer satisfaction.

RESEARCH OBJECTIVES AND METHODOLOGY

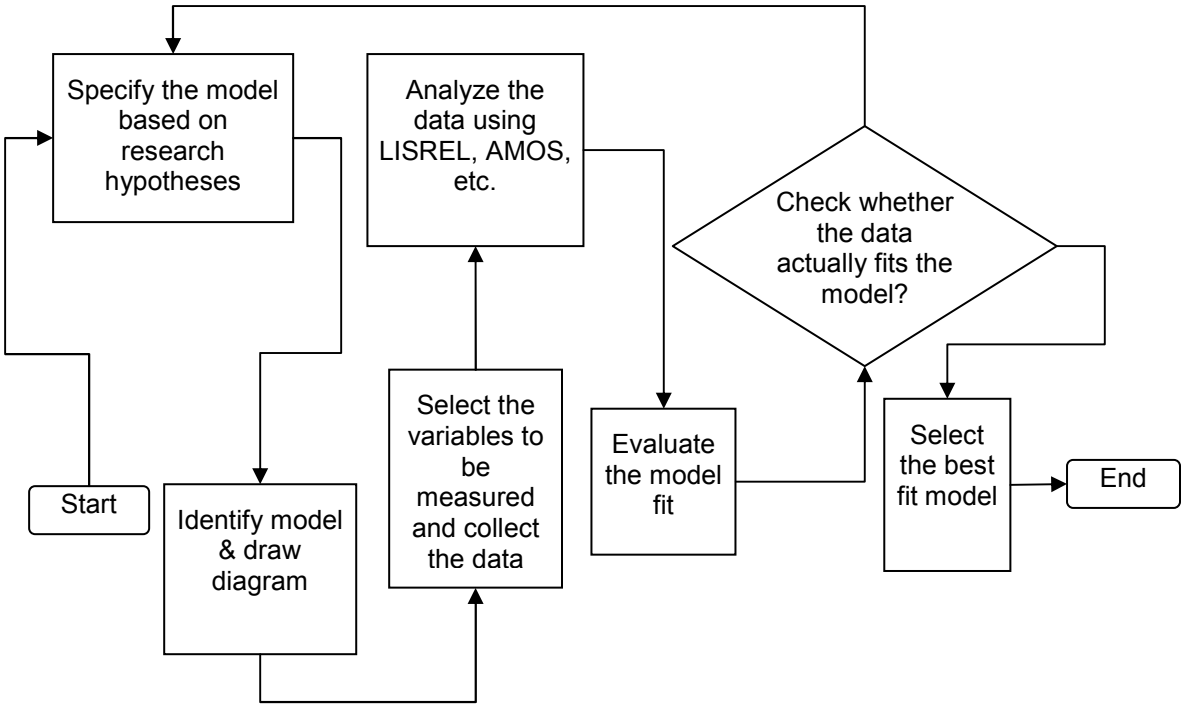
The literature review identified staff satisfaction, technical service quality and functional service quality as key drivers of customer satisfaction. In addition, some researchers suggested process management may impact technical service quality, and, subsequently, customer satisfaction. From the literature, the following hypotheses were generated for testing:

Hypotheses 1: BPM is strongly positively correlated to TSQ
Hypotheses 2: FSQ is positively correlated to CS
Hypotheses 3: TSQ is strongly positively correlated to CS
Hypotheses 4: SS is positively correlated to CS
Hypotheses 5: BPM is strongly positively correlated to CS

Structural Equation Modelling (SEM) was selected as the relevant methodological technique. SEM has been widely used to examine the dimensionality of the service quality scale and to test relationships among variables and casual models that involve both observable and unobservable variables (Kang *et al*. 2002, Kline, 1998 etc). Indeed, the SEM technique has become one of the most popular techniques used by operations management researchers today (Shah *et al.*, 2006).

In structural equation modelling hypotheses proposed by the researchers are expressed in the form of diagrams i.e. all the observed and the latent variables are drawn as a diagram and their relation or correlation are represented by the arrows. There are some standard diagrams for different types of variables. For example, the direct relations between the variables are represented by the direct arrows, whereas the correlations are represented by the arrows on both ends. The latent variables are represented by the ellipses, whereas the observed variables are represented by the square boxes. Because of its diagrammatic representation, the ability of the researchers to draw and interpret the diagrams plays a crucial role. The way the SEM works is shown in the form of the flow chart presented in Figure 1.

Figure 1: Flow diagram of SEM methodology



SEM analysis starts from the model specification i.e. the researchers hypotheses are expressed in the form of a series of structural equations and the model parameters are then defined. The model can also be defined in terms of the diagrams drawn from standard symbols. The next step involves the determination/identification of the specified model which involves the possibility of the derivation of a unique estimate of the model parameters by the computer. If the model cannot be identified it is respecified. After model identification the measures of the variables are represented and the data is collected. It is preferable to identify the model before the researchers begin to collect the data. Afterwards the model is analyzed using the standard model fitting programs (e.g. LISREL, AMOS, etc.) to find the estimates of the parameters. Subsequently, the model's fitness is evaluated, which determines how adequately the data accounts for the model being specified by the researcher. If the data fails to fit the model it is respecified by the researchers and the steps from the model specification stage are repeated until a model is found that actually fits the data.

Data for this model was collected as part of an extensive, longitudinal case study of a large UK Bank. Within the sector, customer satisfaction is seen as a key differentiator (Newman, 2001) and recent deregulation has led to a 'shift in strategic focus from price to service quality' (Frei *et al*., 1997). The selected company had experienced significant variation in service quality performance, following a series of mergers and acquisitions in the late 1990's and had introduced an extensive BPM programme to address perceived service weaknesses. The company had robust data for all the key constructs over a five year period, based upon collection and analysis techniques which met requirements specified by Heskett *et al.* (1994), for example the use of external agencies and adequate, consistent samples. Analysis of this data supported a demand from the research community for more longitudinal analysis, in contrast to the prevailing cross sectional approaches which explore relationships at a single point in time (Voss *et al*., 2002).

Data sources are outlined below:

Customer Satisfaction: Throughout the period, the company had engaged a professional research group to conduct 15, 000 telephone interviews a month in which customer were asked, 'overall, how satisfied are you with the company?'

Staff satisfaction: Again an independent research group had been commissioned to measure levels of staff satisfaction over the five year period. In addition to an annual survey of all staff, quarterly surveys, based on statistically robust sample sizes, were carried out.

Functional Service Quality: The monthly customer interviews also asked questions regarding key features of the encounter such as staff empathy and expertise. These questions conform to the variables found in SERVQUAL, specifically those identified by Gronroos (1984) as reflecting Functional Service Quality.

Technical Service Quality: Kang and James (2004) recognise the challenges associated with operationalising the TSQ concept. For this research TSQ was analysed using a range of Operational metrics such as complaints and adherence to service levels.

Business Process Management: Using criteria established by Maddern, Maull and Smart (2004), measures of BPM were identified in a series of facilitated staff workshops.

Table 1 below show the quarterly results over a five year period for each of the key constructs.

Table 1 Quarterly Results

	Customer Satisfaction	Staff Satisfaction	Functional Service Quality	Complaints	Technical Service Quality	BPM
2000-Q1	66.00	50	61.50	4,657	0.000215	36.00
2000-Q2	66.33	45	61.11	5,056	0.000198	39.00
2000-Q3	66.55	45	62.06	4,419	0.000226	48.00
2000-Q4	67.30	44	62.48	4,587	0.000218	48.00
2001-Q1	67.27	50	62.35	5,458	0.000183	48.00
2001-Q2	65.97	45	60.93	6,513	0.000154	45.00
2001-Q3	65.77	45	60.71	8,070	0.000124	51.00
2001-Q4	65.53	49	60.36	6,954	0.000144	51.00
2002-Q1	66.33	49	61.35	6,041	0.000166	51.00
2002-Q2	67.17	41	61.97	4,511	0.000222	67.00
2002-Q3	66.43	46	60.79	4,051	0.000247	67.00
2002-Q4	66.73	51	61.12	3,249	0.000308	76.00
2003-Q1	67.03	62	61.30	3,497	0.000286	79.00
2003-Q2	67.40	62	61.72	3,711	0.000269	79.00
2003-Q3	67.33	66	60.68	3,331	0.000300	80.00
2003-Q4	67.30	61	60.61	3,476	0.000288	80.00
2004-Q1	67.93	68	61.08	3,467	0.000288	81.00
2004-Q2	67.73	69	60.89	3668	0.000273	81.00
2004-Q3	68.10	67	61.77	3409	0.000293	86.00
2004-Q4	68.00	67	60.80	3409	0.000293	86.00

Qualitative analysis, based on interviews and a range of secondary data such as presentations, minutes and internal magazines, provided further insight and validation of the quantitative findings shown below.

RESEARCH FINDINGS

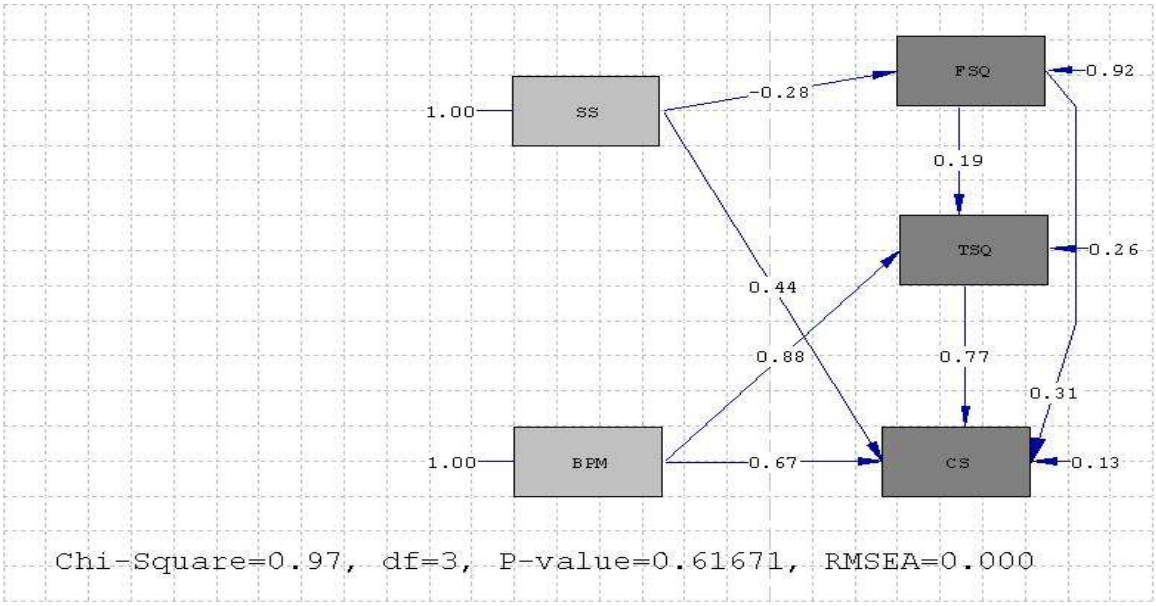
For this research the SEM analysis was run on LISREL 8.54. The relationships between the drivers of customer satisfaction were analysed and the conceptual model was tested using the structural equation modelling technique. During the research a numbers of models were tested and their fitness values were compared in order to identify the best fit model. The comparative fitness measures are shown in Table 2.

Table 2: Fitness indices of the models

	χ^2	GFI (>0.90)	AGFI (≥0.90)	RMR (0.00)	RMSEA (≤.05)	NFI (≥0.90)	NNFI (1)	RFI (1)	IFI (>0.90)
MODEL 1	0.33	0.99	0.97	0.025	0.00	0.97	5.31	0.91	1.29
MODEL 2	4.66	0.94	0.77	0.14	0.00	0.60	-0.03	0.0018	1.05
MODEL 3	0.49	0.99	0.95	0.059	0.00	0.96	5.49	0.87	1.29
MODEL 4	*0.97*	*0.99*	*0.95*	*0.012*	*0.00*	*0.97*	*3.12*	*0.93*	*1.11*

In the table a total of four best models have been compared against some of the standard fitness measures. The specified fitness ranges for the fitness indices are based on the comprehensive literature review of Journals. As can be seen from the comparative analysis, model 4 accounts for the best fit on all of the fitness indices. However, all the four models are very close to each other. Previous SEM research suggests that it is always better to compare more than 2 models, in order to find the best conceptual model. The graphical representation of the best fit model has been shown in Figure 2. Whilst the models tested are very close according to the fitness measures, models 1, 2, and 3 do not conform to the main theoretical arguments.

Figure 2: Graphical representation of Best Fit SEM Model (Model 4)



The best fit model i.e. model 4 shows that all hypotheses posited in the research are found to be correct. According to hypothesis 1, BPM has a strong positive correlation with TSQ,

which is found to be correct. The results indicates that BPM drives TSQ which further drives customer satisfaction i.e. effective management of process is crucial for technical service quality which finally contributes to customer satisfaction. Hypothesis 2 assumed that FSQ is positively correlated to CS, which is also found to be correct. According to hypotheses 3 TSQ must have a strong positive correlation with CS, and our findings revealed that TSQ is positively correlated to CS. The results further indicate that hypothesis 4 is also correct i.e. SS is positively correlated to CS, which emphasizes that staff satisfaction is a key player in driving the customer satisfaction. The strong positive correlation between BPM and CS proves hypotheses 5 to be correct. The high correlation between these two factors indicates the importance of BPM in driving customer satisfaction. The graphical representation also shows the disturbances on each of the variables.

A key objective of the study was to analyze the role of BPM in driving customer satisfaction. The results clearly indicate that BPM is as crucial as SS, FSQ, and TSQ in driving customer satisfaction. As such the results support earlier findings from Roth and Jackson (1995), Frei *et al.* (1997) etc. and challenge the prevailing orthodoxy expressed in the service profit chain and SERQVQUAL.

CONCLUSIONS

The results have important consequences for both practitioners and the research community. Whilst the results recognise the role of staff satisfaction and both elements of service quality, they highlight the significance of BPM as a critical factor in driving customer satisfaction. They suggest that practitioners should focus on their process management rather than simply addressing functional and technical service quality. They also suggest that more research is needed into the emerging BPM phenomenon, particularly the link with customer satisfaction. The research provides a much needed longitudinal perspective on this important topic and supports the value of SEM methods in exploring complex issues.

Nevertheless, the research is subject to limitations. Findings are based on a single sector and a limited data set. Future research, across more sectors and using a wider data set, would be welcomed.

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