



Keterangan: 1 = Sangat Tidak Setuju 3 = Netral 5 = Sangat Setuju  
 2 = Tidak Setuju 4 = Setuju

NO.	KETERANGAN	STS	TS	N	S	SS
<b>X1 : KUALITAS LAYANAN</b>						
1.	Selama mengadakan transaksi melalui Bank BRI, jarang sekali ditemukan kesalahan pencatatan transaksi yang dilakukan oleh teller					
2.	Pada saat melayani, karyawan bank BRI bersikap ramah dan menyenangkan					
3.	Pencatatan transaksi di Bank BRI berjalan dengan cepat dan tepat					
4.	Bank BRI menyediakan berbagai fasilitas transaksi keuangan yang sangat membantu saya					
<b>X2 : PENANGANAN TERHADAP KOMPLAIN</b>						
1.	Apabila saya menemui masalah terhadap pelayanan Bank BRI dan saya menyampaikan keluhan, maka bank akan					

	menyelesaikan keluhan yang saya hadapi dengan cepat dan tepat					
2.	Apabila saya menemui masalah terhadap pelayanan Bank BRI dan saya menyampaikan keluhan, maka bank akan ditanggapi keluhan yang saya hadapi dengan cepat dan tepat					
3.	Prosedur mengajukan komplain di BRI mudah					
<b>Y1 : KEPUASAN</b>						
1.	Pelayanan transaksi yang disediakan Bank BRI mampu memenuhi harapan					
2.	Fasilitas transaksi perbankan yang telah disediakan oleh Bank BRI telah memenuhi harapan					
3.	Memilih Bank BRI sebagai mitra dalam melakukan transaksi keuangan					

**Y2 : LOYALITAS**

1.	Ketika akan mengadakan transaksi perbankan, Bank BRI menjadi pilihan pertama saya					
2.	Selama menjadi nasabah Bank BRI, saya banyak memanfaatkan berbagai fasilitas kemudahan yang ditawarkan					
3.	Saya akan merekomendasikan Bank BRI sebagai tempat untuk melakukan transaksi keuangan kepada relasi dan kolega saya					
4.	Bank BRI banyak membantu saya dalam melakukan transaksi perbankan					

## Lampiran 2

### Hasil Penyebaran Kuesioner

No	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14
1	4	2	5	5	4	5	4	4	4	2	3	4	4	4
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	3	2	4	2	1	1	1	1	1	1	1	1	1	1
4	4	3	4	3	1	1	3	3	3	3	1	3	1	2
5	4	4	4	4	4	4	4	4	4	3	3	3	4	4
6	4	4	4	4	4	3	4	1	4	4	3	3	3	4
7	4	4	4	5	4	4	4	1	4	2	3	2	4	4
8	4	4	4	5	4	4	3	4	4	3	3	3	4	4
9	4	3	5	3	3	4	5	3	4	2	4	4	5	5
10	3	3	3	4	2	2	3	3	3	3	3	3	3	4
11	2	3	2	2	3	3	4	4	4	3	3	4	3	4
12	4	4	4	4	4	4	4	3	4	3	4	3	4	4
13	4	3	4	4	4	4	3	3	5	2	1	1	4	4
14	5	3	4	4	4	5	4	4	5	4	5	4	5	4
15	4	4	4	4	4	4	4	4	4	4	4	4	4	3
16	5	4	4	4	4	4	3	4	4	1	1	1	3	3
17	5	4	5	5	4	3	5	3	4	4	4	5	5	4
18	4	4	4	4	2	4	4	4	4	2	3	3	4	4
19	5	5	5	5	4	4	5	5	5	5	4	4	4	5
20	4	4	3	4	4	3	4	4	4	4	4	4	4	4
21	1	2	1	2	2	1	1	1	2	2	2	1	2	1
22	5	4	5	4	4	4	4	4	5	4	4	5	4	4
23	5	5	5	5	1	5	5	5	5	4	3	4	5	5
24	5	5	5	5	4	5	5	5	5	5	5	5	5	5
25	5	5	5	4	4	4	3	3	3	3	3	3	4	3
26	4	4	3	3	4	2	4	5	4	1	4	2	3	4
27	4	3	3	1	4	4	4	4	4	4	4	3	4	4
28	5	3	5	4	3	3	4	4	5	3	4	4	3	3
29	4	5	4	1	5	3	4	3	4	3	4	3	4	4

30	4	3	3	4	4	4	3	3	3	3	3	3	3	3
31	4	5	4	5	4	4	5	4	4	4	4	4	4	4
32	4	5	5	5	4	5	5	4	4	5	4	5	4	5
33	4	5	4	1	4	5	4	5	4	5	4	5	4	5
34	4	5	5	4	4	4	5	4	5	5	4	5	4	5
35	4	5	5	2	4	4	4	5	2	3	3	2	4	5
36	5	3	3	3	4	4	4	4	2	4	4	4	3	3
37	2	4	4	4	1	5	5	5	5	5	5	5	2	3
38	3	2	3	4	3	4	3	3	4	3	5	4	4	3
39	2	2	2	4	5	5	4	4	3	3	4	4	3	3
40	3	5	5	5	5	3	2	1	5	5	5	5	3	5
41	4	4	5	4	4	5	4	5	4	5	5	4	4	5
42	2	2	1	4	4	4	4	4	4	4	3	4	4	3
43	2	3	1	4	4	4	3	3	5	2	1	3	4	4
44	4	5	4	4	3	4	4	5	5	4	4	4	4	4
45	4	4	3	3	4	3	4	4	3	3	3	3	5	4
46	4	4	4	4	1	4	4	4	3	4	4	4	4	4
47	4	4	4	4	4	4	4	3	3	3	4	4	4	4
48	2	4	2	4	5	5	5	5	5	5	4	5	2	4
49	2	4	2	2	1	1	1	1	5	5	5	5	2	2
50	4	4	4	4	4	4	4	4	4	4	4	4	4	4
51	2	2	2	4	4	4	4	4	4	4	4	4	4	3
52	4	4	5	4	3	2	2	4	2	3	3	3	2	2
53	2	4	4	4	4	5	5	4	1	4	2	5	4	4
54	2	3	2	4	1	3	2	3	5	3	2	4	4	3
55	4	4	3	4	4	4	4	4	2	3	4	5	4	5
56	4	4	1	4	5	5	5	5	2	2	3	2	5	5
57	2	3	3	5	4	4	4	3	4	4	4	4	2	2
58	4	3	4	4	4	4	5	4	5	5	5	5	4	3
59	4	3	1	3	4	4	3	3	4	4	4	4	3	3
60	2	2	2	2	3	3	3	2	3	4	5	3	2	2
61	4	4	2	2	4	4	2	4	2	2	2	4	2	2
62	2	4	4	4	5	3	4	3	4	2	4	5	3	4
63	3	3	3	4	5	5	5	3	3	3	3	5	5	5

64	2	3	3	4	4	4	3	3	4	3	3	5	5	5
65	3	4	4	3	4	5	5	4	1	1	1	5	5	5
66	2	3	3	5	5	5	5	4	5	5	3	5	4	4
67	4	4	3	4	3	3	4	3	2	3	4	1	2	2
68	2	2	3	3	1	1	1	1	5	5	5	5	4	4
69	2	2	4	4	5	5	5	4	4	4	3	4	4	4
70	3	4	3	5	5	5	4	4	4	5	5	4	5	4
71	3	3	2	4	4	4	4	4	4	4	3	4	4	4
72	3	3	4	4	2	3	3	4	5	5	5	5	2	4
73	5	5	4	4	3	3	4	3	5	5	3	3	4	5
74	4	3	4	5	3	4	5	2	3	3	4	3	3	4
75	3	4	4	3	3	3	4	3	3	4	4	5	3	3
76	3	3	2	2	5	5	5	5	2	3	3	4	3	4
77	3	3	3	3	4	4	3	5	3	4	3	4	3	3
78	3	4	4	3	3	3	2	5	3	4	3	3	3	4
79	4	4	4	4	4	4	3	4	3	3	3	4	4	4
80	2	3	2	2	4	4	2	4	5	5	5	5	3	3
81	3	4	4	5	5	5	5	5	2	2	2	2	2	2
82	2	2	2	2	2	2	2	2	2	2	2	2	2	2
83	2	2	2	2	2	2	2	2	3	4	3	2	3	4
84	3	3	4	3	3	3	4	3	3	3	4	3	4	4
85	3	3	4	3	4	3	3	3	3	3	4	3	4	3
86	3	3	3	2	3	3	3	4	3	3	4	3	3	4
87	2	3	3	3	3	3	4	4	3	3	3	3	3	3
88	3	3	3	3	3	3	3	3	2	3	4	3	1	1
89	1	4	1	1	2	2	3	3	4	4	4	5	4	4
90	4	5	4	4	5	5	4	4	2	4	4	4	4	4
91	4	4	3	2	2	2	4	2	2	3	2	3	3	3
92	3	3	4	4	4	4	3	4	4	3	3	3	2	2
93	1	2	2	3	4	4	4	3	4	4	3	5	1	3
94	3	3	1	2	3	4	4	3	2	2	3	2	5	4
95	4	5	5	5	4	5	4	5	4	4	5	5	5	4
96	4	4	5	4	5	5	5	5	4	4	5	4	4	4
97	3	4	3	4	4	4	5	4	4	5	4	5	4	5

98	4	5	5	4	4	2	4	5	4	4	5	5	4	4
99	4	5	5	4	3	4	4	4	2	2	3	2	4	5
100	1	3	4	4	5	5	5	3	3	4	2	2	2	3

### LAMPIRAN 3

DATE: 07/20/2012

TIME: 13:18

P R E L I S 2.80 (STUDENT)

BY

Karl G. Jöreskog & Dag Sörbom

This program is published exclusively by  
Scientific Software International, Inc.  
7383 N. Lincoln Avenue, Suite 100  
Lincolnwood, IL 60712, U.S.A.

Phone: (800)247-6113, (847)675-0720, Fax: (847)675-2140  
Copyright by Scientific Software International, Inc., 1981-2006  
Use of this program is subject to the terms specified in the  
Universal Copyright Convention.  
Website: [www.ssicentral.com](http://www.ssicentral.com)

The following lines were read from file D:\sketsa  
temenq\titipan\v\DATA.PR2:

```
!PRELIS SYNTAX: Can be edited
SY='D:\sketsa temenq\titipan\v\DATA.PSF'
NS 1 2 3 4 5 6 7 8 9 10 11 12 13 14
OU MA=CM SM=D:\DATA.COV XT
```

Total Sample Size = 100

Univariate Summary Statistics for Continuous Variables

Variable Mean St. Dev. T-Value Skewness Kurtosis Minimum Freq.  
Maximum Freq.

```
-----
  KL1  3.330  1.083  30.749  -0.109  -0.310  0.984  5  5.274
11
  KL2  3.560  0.957  37.206  -0.124  -0.399  0.876  1  5.059
17
```

19	KL3	3.450	1.184	29.142	-0.153	-0.609	1.148	8	5.219
16	KL4	3.570	1.075	33.194	-0.183	-0.265	1.216	5	5.306
15	PTK1	3.540	1.123	31.524	-0.151	-0.333	1.382	9	5.399
23	PTK2	3.680	1.100	33.459	-0.225	-0.537	1.372	6	5.215
23	PTK3	3.720	1.064	34.950	-0.237	-0.471	1.394	5	5.209
18	KP1	3.560	1.095	32.520	-0.138	-0.510	1.413	8	5.244
21	KP2	3.560	1.113	31.985	-0.195	-0.531	1.044	4	5.163
18	KP3	3.440	1.095	31.424	-0.142	-0.505	1.082	5	5.106
16	L1	3.470	1.077	32.208	-0.118	-0.460	1.301	7	5.189
27	L2	3.640	1.159	31.400	-0.257	-0.699	1.214	6	5.137
13	L3	3.480	1.049	33.171	-0.156	-0.256	1.198	5	5.280
18	L4	3.640	1.020	35.679	-0.197	-0.315	1.316	4	5.212

#### Test of Univariate Normality for Continuous Variables

Variable	Skewness		Kurtosis		Skewness and Kurtosis	
	Z-Score	P-Value	Z-Score	P-Value	Chi-Square	P-Value
KL1	-0.467	0.641	-0.598	0.550	0.575	0.750
KL2	-0.531	0.595	-0.871	0.384	1.041	0.594
KL3	-0.651	0.515	-1.628	0.103	3.075	0.215
KL4	-0.778	0.437	-0.469	0.639	0.824	0.662
PTK1	-0.644	0.519	-0.666	0.505	0.858	0.651
PTK2	-0.954	0.340	-1.350	0.177	2.732	0.255
PTK3	-1.002	0.316	-1.109	0.267	2.235	0.327
KP1	-0.590	0.555	-1.248	0.212	1.905	0.386
KP2	-0.828	0.408	-1.326	0.185	2.443	0.295
KP3	-0.604	0.546	-1.230	0.219	1.878	0.391

L1	-0.504	0.614	-1.070	0.284	1.400	0.497
L2	-1.085	0.278	-2.021	0.043	5.260	0.072
L3	-0.663	0.507	-0.445	0.656	0.637	0.727
L4	-0.835	0.404	-0.614	0.539	1.074	0.584

Relative Multivariate Kurtosis = 1.066

Test of Multivariate Normality for Continuous Variables

Skewness			Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
44.164	4.809	0.000	238.732	3.583	0.000	35.968	0.000

DATE: 7/20/2012

TIME: 13:23

LISREL 8.80 (STUDENT EDITION)

BY

Karl G. Jöreskog & Dag Sörbom

This program is published exclusively by  
 Scientific Software International, Inc.  
 7383 N. Lincoln Avenue, Suite 100  
 Lincolnwood, IL 60712, U.S.A.

Phone: (800)247-6113, (847)675-0720, Fax: (847)675-2140  
 Copyright by Scientific Software International, Inc., 1981-2006  
 Use of this program is subject to the terms specified in the  
 Universal Copyright Convention.  
 Website: [www.ssicentral.com](http://www.ssicentral.com)

The following lines were read from file D:\sketsa temenq\titipan\v\DATA.spl:

```

LOYALTY
OBSERVED VARIABLE KL1 KL2 KL3 KL4 PTK1 PTK2 PTK3 KP1
KP2 KP3 L1 L2 L3 L4
COVARIANCE MATRIX FROM FILE D:\DATA.COV
LATENT VARIABLES KL PTK KP L
SAMPLE SIZE 100
RELATIONSHIP:
KL1 = 1*KL
KL2-KL4 = KL
PTK1 = 1*PTK
PTK2-PTK3 = PTK
KP1 = 1*KP
KP2-KP3 = KP
L1 = 1*L
L2-L4 = L
KP = KL PTK
L = KP
OPTIONS: SC SS RS EF
PATH DIAGRAM
END OF PROGRAM

```

Sample Size = 100

LOYALTY

Covariance Matrix

	KP1	KP2	KP3	L1	L2	L3
KP1	1.20					
KP2	0.18	1.24				
KP3	0.27	0.69	1.20			
L1	0.23	0.54	0.76	1.16		
L2	0.31	0.56	0.81	0.67	1.34	
L3	0.32	0.27	0.13	0.22	0.34	1.10
L4	0.39	0.32	0.30	0.21	0.44	0.76
KL1	0.37	0.20	0.03	0.17	-0.05	0.44
KL2	0.44	0.20	0.28	0.23	0.25	0.36

KL3	0.37	0.26	0.21	0.29	0.23	0.31
KL4	0.24	0.42	0.26	0.19	0.26	0.35
PTK1	0.40	0.06	0.13	0.12	0.25	0.32
PTK2	0.70	0.15	0.26	0.14	0.38	0.51
PTK3	0.57	0.14	0.27	0.18	0.39	0.48

Covariance Matrix

	L4	KL1	KL2	KL3	KL4	PTK1
L4	1.04					
KL1	0.38	1.17				
KL2	0.52	0.59	0.92			
KL3	0.45	0.78	0.65	1.40		
KL4	0.30	0.39	0.32	0.60	1.16	
PTK1	0.33	0.09	0.23	0.13	0.37	1.26
PTK2	0.47	0.21	0.25	0.29	0.54	0.76
PTK3	0.55	0.31	0.36	0.42	0.50	0.56

Covariance Matrix

	PTK2	PTK3
PTK2	1.21	
PTK3	0.79	1.13

LOYALTY

Number of Iterations = 37

LISREL Estimates (Maximum Likelihood)

Measurement Equations

$$\begin{aligned}
 \text{KP1} &= 1.00 * \text{KP}, \text{Errorvar.} = 0.69, R^2 = 0.43 \\
 &\quad (0.12) \\
 &\quad 5.81
 \end{aligned}$$

$$\begin{aligned} \text{KP2} &= 0.50 * \text{KP}, \text{Errorvar.} = 1.11, R^2 = 0.10 \\ & (0.17) \quad (0.16) \\ & 2.84 \quad 6.89 \end{aligned}$$

$$\begin{aligned} \text{KP3} &= 0.55 * \text{KP}, \text{Errorvar.} = 1.04, R^2 = 0.13 \\ & (0.17) \quad (0.15) \\ & 3.21 \quad 6.83 \end{aligned}$$

$$\begin{aligned} \text{L1} &= 1.00 * \text{L}, \text{Errorvar.} = 1.05, R^2 = 0.092 \\ & (0.15) \\ & 6.92 \end{aligned}$$

$$\begin{aligned} \text{L2} &= 1.60 * \text{L}, \text{Errorvar.} = 1.07, R^2 = 0.20 \\ & (0.64) \quad (0.16) \\ & 2.48 \quad 6.73 \end{aligned}$$

$$\begin{aligned} \text{L3} &= 2.52 * \text{L}, \text{Errorvar.} = 0.42, R^2 = 0.62 \\ & (0.89) \quad (0.089) \\ & 2.83 \quad 4.71 \end{aligned}$$

$$\begin{aligned} \text{L4} &= 2.72 * \text{L}, \text{Errorvar.} = 0.25, R^2 = 0.76 \\ & (0.95) \quad (0.083) \\ & 2.85 \quad 2.96 \end{aligned}$$

$$\begin{aligned} \text{KL1} &= 1.00 * \text{KL}, \text{Errorvar.} = 0.54, R^2 = 0.54 \\ & (0.10) \\ & 5.32 \end{aligned}$$

$$\begin{aligned} \text{KL2} &= 0.92 * \text{KL}, \text{Errorvar.} = 0.38, R^2 = 0.59 \\ & (0.14) \quad (0.077) \\ & 6.72 \quad 4.97 \end{aligned}$$

$$\begin{aligned} \text{KL3} &= 1.16 * \text{KL}, \text{Errorvar.} = 0.55, R^2 = 0.61 \\ & (0.17) \quad (0.12) \\ & 6.80 \quad 4.78 \end{aligned}$$

$$\begin{aligned} \text{KL4} &= 0.69 * \text{KL}, \text{Errorvar.} = 0.86, R^2 = 0.26 \\ & (0.15) \quad (0.13) \\ & 4.59 \quad 6.55 \end{aligned}$$

$$\text{PTK1} = 1.00 \cdot \text{PTK}, \text{Errorvar.} = 0.73, R^2 = 0.42$$

(0.12)  
6.25

$$\text{PTK2} = 1.36 \cdot \text{PTK}, \text{Errorvar.} = 0.23, R^2 = 0.81$$

(0.20)      (0.088)  
6.70      2.64

$$\text{PTK3} = 1.12 \cdot \text{PTK}, \text{Errorvar.} = 0.47, R^2 = 0.59$$

(0.18)      (0.089)  
6.30      5.29

### Structural Equations

$$\text{KP} = 0.43 \cdot \text{KL} + 0.62 \cdot \text{PTK}, \text{Errorvar.} = 0.059, R^2 = 0.89$$

(0.12)   (0.14)      (0.064)  
3.74   4.32      0.91

$$\text{L} = 0.35 \cdot \text{KP}, \text{Errorvar.} = 0.046, R^2 = 0.57$$

(0.13)      (0.034)  
2.62      1.38

### Reduced Form Equations

$$\text{KP} = 0.43 \cdot \text{KL} + 0.62 \cdot \text{PTK}, \text{Errorvar.} = 0.059, R^2 = 0.89$$

(0.12)   (0.14)  
3.74   4.32

$$\text{L} = 0.15 \cdot \text{KL} + 0.21 \cdot \text{PTK}, \text{Errorvar.} = 0.053, R^2 = 0.50$$

(0.064)   (0.087)  
2.34   2.46

### Covariance Matrix of Independent Variables

	KL	PTK
	-----	-----
KL	0.63	

(0.16)  
 3.90  
 PTK 0.24 0.53  
 (0.08) (0.16)  
 2.90 3.40

Covariance Matrix of Latent Variables

	KP	L	KL	PTK
KP	0.51			
L	0.18	0.11		
KL	0.42	0.15	0.63	
PTK	0.43	0.15	0.24	0.53

Goodness of Fit Statistics

Degrees of Freedom = 73

Minimum Fit Function Chi-Square = 247.19 (P = 0.0)

Normal Theory Weighted Least Squares Chi-Square = 251.30 (P = 0.0)

Estimated Non-centrality Parameter (NCP) = 178.30

90 Percent Confidence Interval for NCP = (133.83 ; 230.36)

Minimum Fit Function Value = 2.50

Population Discrepancy Function Value (F0) = 1.80

90 Percent Confidence Interval for F0 = (1.35 ; 2.33)

Root Mean Square Error of Approximation (RMSEA) = 0.16

90 Percent Confidence Interval for RMSEA = (0.14 ; 0.18)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 3.18

90 Percent Confidence Interval for ECVI = (2.74 ; 3.71)

ECVI for Saturated Model = 2.12

ECVI for Independence Model = 11.16

Chi-Square for Independence Model with 91 Degrees of Freedom = 1076.76

Independence AIC = 1104.76

Model AIC = 315.30

Saturated AIC = 210.00

Independence CAIC = 1155.23  
 Model CAIC = 430.66  
 Saturated CAIC = 588.54

Normed Fit Index (NFI) = 0.77  
 Non-Normed Fit Index (NNFI) = 0.78  
 Parsimony Normed Fit Index (PNFI) = 0.62  
 Comparative Fit Index (CFI) = 0.82  
 Incremental Fit Index (IFI) = 0.83  
 Relative Fit Index (RFI) = 0.71

Critical N (CN) = 42.66

Root Mean Square Residual (RMR) = 0.16  
 Standardized RMR = 0.13  
 Goodness of Fit Index (GFI) = 0.73  
 Adjusted Goodness of Fit Index (AGFI) = 0.62  
 Parsimony Goodness of Fit Index (PGFI) = 0.51

## LOYALTY

### Fitted Covariance Matrix

	KP1	KP2	KP3	L1	L2	L3
KP1	1.20					
KP2	0.25	1.24				
KP3	0.28	0.14	1.20			
L1	0.18	0.09	0.10	1.16		
L2	0.28	0.14	0.16	0.17	1.34	
L3	0.44	0.22	0.25	0.27	0.43	1.10
L4	0.48	0.24	0.27	0.29	0.47	0.74
KL1	0.42	0.21	0.23	0.15	0.23	0.37
KL2	0.39	0.19	0.22	0.13	0.21	0.34
KL3	0.49	0.24	0.27	0.17	0.27	0.43
KL4	0.29	0.14	0.16	0.10	0.16	0.25
PTK1	0.43	0.21	0.24	0.15	0.24	0.38
PTK2	0.59	0.29	0.33	0.20	0.32	0.51
PTK3	0.48	0.24	0.27	0.17	0.27	0.42

Fitted Covariance Matrix

	L4	KL1	KL2	KL3	KL4	PTK1
L4	1.04					
KL1	0.40	1.17				
KL2	0.37	0.58	0.92			
KL3	0.46	0.73	0.67	1.40		
KL4	0.27	0.43	0.40	0.50	1.16	
PTK1	0.41	0.24	0.22	0.28	0.16	1.26
PTK2	0.55	0.33	0.30	0.38	0.22	0.72
PTK3	0.46	0.27	0.25	0.31	0.18	0.59

Fitted Covariance Matrix

	PTK2	PTK3
PTK2	1.21	
PTK3	0.81	1.13

Fitted Residuals

	KP1	KP2	KP3	L1	L2	L3
KP1	0.00					
KP2	-0.08	0.00				
KP3	-0.01	0.55	0.00			
L1	0.06	0.46	0.66	0.00		
L2	0.03	0.42	0.65	0.50	0.00	
L3	-0.12	0.05	-0.12	-0.05	-0.09	0.00
L4	-0.09	0.08	0.03	-0.08	-0.03	0.02
KL1	-0.06	-0.01	-0.20	0.03	-0.28	0.08
KL2	0.05	0.01	0.07	0.09	0.04	0.03
KL3	-0.12	0.02	-0.06	0.12	-0.04	-0.11
KL4	-0.05	0.27	0.09	0.09	0.10	0.10
PTK1	-0.03	-0.16	-0.11	-0.03	0.01	-0.06
PTK2	0.11	-0.15	-0.07	-0.06	0.06	0.00
PTK3	0.09	-0.10	0.00	0.01	0.12	0.06

Fitted Residuals

	L4	KL1	KL2	KL3	KL4	PTK1
L4	0.00					
KL1	-0.02	0.00				
KL2	0.15	0.00	0.00			
KL3	-0.01	0.05	-0.03	0.00		
KL4	0.03	-0.05	-0.08	0.09	0.00	
PTK1	-0.08	-0.15	0.01	-0.15	0.21	0.00
PTK2	-0.08	-0.11	-0.04	-0.09	0.32	0.04
PTK3	0.09	0.04	0.12	0.11	0.32	-0.03

### Fitted Residuals

	PTK2	PTK3
PTK2	0.00	
PTK3	-0.02	0.00

### Summary Statistics for Fitted Residuals

Smallest Fitted Residual = -0.28  
 Median Fitted Residual = 0.00  
 Largest Fitted Residual = 0.66

### Stemleaf Plot

```

- 2|8
- 2|0
- 1|6555
- 1|2221110
- 0|9998888876666555
- 0|443333322111000000000000000000
0|1111223333444
0|5556667889999999
1|0011222
1|5
2|1
2|7
3|22
3|
4|2

```

4|6  
 5|0  
 5|5  
 6|  
 6|56

Standardized Residuals

	KP1	KP2	KP3	L1	L2	L3
KP1	--					
KP2	-0.95	--				
KP3	-0.16	5.18	--			
L1	0.58	4.07	6.03	--		
L2	0.35	3.66	5.83	4.82	--	
L3	-2.31	0.55	-1.52	-0.91	-1.67	--
L4	-2.10	1.15	0.43	-2.35	-0.91	3.53
KL1	-0.82	-0.07	-2.31	0.26	-2.72	1.05
KL2	0.89	0.07	0.89	1.06	0.44	0.41
KL3	-1.75	0.23	-0.66	1.11	-0.32	-1.52
KL4	-0.53	2.60	0.93	0.82	0.91	1.11
PTK1	-0.45	-1.65	-1.16	-0.25	0.08	-0.78
PTK2	2.63	-2.22	-1.09	-0.67	0.62	0.06
PTK3	1.57	-1.21	0.06	0.09	1.29	0.93

Standardized Residuals

	L4	KL1	KL2	KL3	KL4	PTK1
L4	--					
KL1	-0.34	--				
KL2	2.82	0.18	--			
KL3	-0.11	1.72	-1.28	--		
KL4	0.39	-0.89	-1.78	1.78	--	
PTK1	-1.11	-1.57	0.08	-1.50	1.98	--
PTK2	-2.00	-1.70	-0.82	-1.38	3.49	2.31
PTK3	1.70	0.51	1.77	1.34	3.33	-0.75

Standardized Residuals

PTK2    PTK3

```

-----
PTK2    - -
PTK3   -1.78    - -

```

### Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -2.72  
 Median Standardized Residual = 0.00  
 Largest Standardized Residual = 6.03

### Stemleaf Plot

```

- 2|7
- 2|433210
- 1|8877766555
- 1|4322110
- 0|99988877755
- 0|33221100000000000000
0|11111122334444
0|5666899999
1|1111133
1|67788
2|03
2|668
3|3
3|557
4|1
4|8
5|2
5|8
6|0

```

### Largest Negative Standardized Residuals

Residual for KL1 and L2 -2.72

### Largest Positive Standardized Residuals

Residual for KP3 and KP2 5.18

Residual for L1 and KP2 4.07

Residual for L1 and KP3 6.03

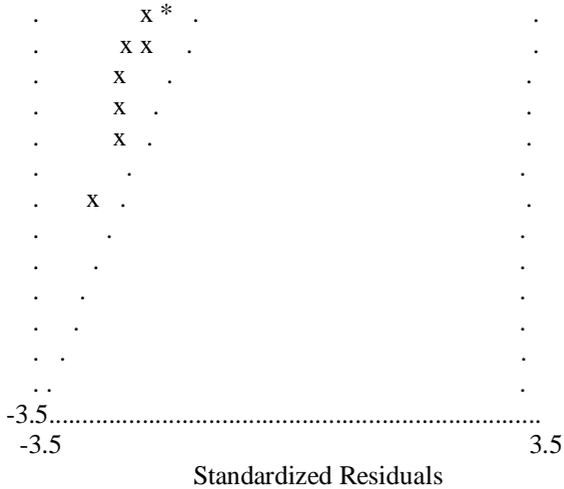
Residual for L2 and KP2 3.66

Residual for L2 and KP3 5.83

Residual for L2 and L1 4.82

Residual for L4 and L3 3.53





The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
KL4	PTK	13.4	0.60

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
KP3	KP2	26.8	0.58
L1	KP2	13.7	0.41
L1	KP3	34.9	0.63
L2	KP2	10.6	0.37
L2	KP3	33.9	0.64
L2	L1	23.2	0.53
L4	L3	12.5	0.53
KL1	L2	12.6	-0.31
KL1	L3	8.7	0.18

## LOYALTY

### Standardized Solution

#### LAMBDA-Y

KP	L
-----	-----

KP1	0.71	--
KP2	0.35	--
KP3	0.40	--
L1	--	0.33
L2	--	0.52
L3	--	0.82
L4	--	0.89

#### LAMBDA-X

	KL	PTK
	-----	-----
KL1	0.80	--
KL2	0.73	--
KL3	0.92	--
KL4	0.55	--
PTK1	--	0.73
PTK2	--	0.99
PTK3	--	0.82

#### BETA

	KP	L
	-----	-----
KP	--	--
L	0.75	--

#### GAMMA

	KL	PTK
	-----	-----
KP	0.48	0.63
L	--	--

#### Correlation Matrix of ETA and KSI

	KP	L	KL	PTK
	-----	-----	-----	-----
KP	1.00			
L	0.75	1.00		
KL	0.74	0.56	1.00	

PTK 0.83 0.63 0.41 1.00

PSI

Note: This matrix is diagonal.

	KP	L
	-----	-----
	0.11	0.43

Regression Matrix ETA on KSI (Standardized)

	KL	PTK
	-----	-----
KP	0.48	0.63
L	0.36	0.48

LOYALTY

Completely Standardized Solution

LAMBDA-Y

	KP	L
	-----	-----
KP1	0.65	--
KP2	0.32	--
KP3	0.36	--
L1	--	0.30
L2	--	0.45
L3	--	0.79
L4	--	0.87

LAMBDA-X

	KL	PTK
	-----	-----
KL1	0.73	--
KL2	0.76	--
KL3	0.78	--
KL4	0.51	--
PTK1	--	0.65

PTK2 -- 0.90  
 PTK3 -- 0.77

BETA

	KP	L
KP	--	--
L	0.75	--

GAMMA

	KL	PTK
KP	0.48	0.63
L	--	--

Correlation Matrix of ETA and KSI

	KP	L	KL	PTK
KP	1.00			
L	0.75	1.00		
KL	0.74	0.56	1.00	
PTK	0.83	0.63	0.41	1.00

PSI

Note: This matrix is diagonal.

	KP	L
KP	0.11	
L		0.43

THETA-EPS

	KP1	KP2	KP3	L1	L2	L3
KP1	0.57					
KP2	0.90					
KP3	0.87					
L1	0.91					
L2	0.80					
L3	0.38					

THETA-EPS

L4  
-----  
0.24

THETA-DELTA

KL1	KL2	KL3	KL4	PTK1	PTK2
-----	-----	-----	-----	-----	-----
0.46	0.41	0.39	0.74	0.58	0.19

THETA-DELTA

PTK3  
-----  
0.41

Regression Matrix ETA on KSI (Standardized)

	KL	PTK
-----	-----	-----
KP	0.48	0.63
L	0.36	0.48

LOYALTY

Total and Indirect Effects

Total Effects of KSI on ETA

	KL	PTK
-----	-----	-----
KP	0.43	0.62
	(0.12)	(0.14)
	3.74	4.32
L	0.15	0.21
	(0.06)	(0.09)
	2.34	2.46

Indirect Effects of KSI on ETA

KL	PTK
----	-----

	-----	-----
KP	--	--
L	0.15	0.21
	(0.06)	(0.09)
	2.34	2.46

Total Effects of ETA on ETA

	KP	L
	-----	-----
KP	--	--
L	0.35	--
	(0.13)	
	2.62	

Largest Eigenvalue of B\*B' (Stability Index) is 0.120

Total Effects of ETA on Y

	KP	L
	-----	-----
KP1	1.00	--
KP2	0.50	--
	(0.17)	
	2.84	
KP3	0.55	--
	(0.17)	
	3.21	
L1	0.35	1.00
	(0.13)	
	2.62	
L2	0.55	1.60
	(0.15)	(0.64)
	3.61	2.48
L3	0.87	2.52
	(0.17)	(0.89)
	5.10	2.83
L4	0.94	2.72
	(0.17)	(0.95)
	5.49	2.85

Indirect Effects of ETA on Y

	KP	L
	-----	-----
KP1	--	--
KP2	--	--
KP3	--	--
L1	0.35	--
	(0.13)	
	2.62	
L2	0.55	--
	(0.15)	
	3.61	
L3	0.87	--
	(0.17)	
	5.10	
L4	0.94	--
	(0.17)	
	5.49	

Total Effects of KSI on Y

	KL	PTK
	-----	-----
KP1	0.43	0.62
	(0.12)	(0.14)
	3.74	4.32
KP2	0.21	0.31
	(0.09)	(0.12)
	2.49	2.64
KP3	0.24	0.34
	(0.09)	(0.12)
	2.72	2.92
L1	0.15	0.21
	(0.06)	(0.09)
	2.34	2.46
L2	0.24	0.34
	(0.08)	(0.11)
	2.96	3.23
L3	0.38	0.54
	(0.10)	(0.13)

	3.63	4.16
L4	0.41	0.58
	(0.11)	(0.13)
	3.76	4.36

## LOYALTY

### Standardized Total and Indirect Effects

#### Standardized Total Effects of KSI on ETA

	KL	PTK
	-----	-----
KP	0.48	0.63
L	0.36	0.48

#### Standardized Indirect Effects of KSI on ETA

	KL	PTK
	-----	-----
KP	--	--
L	0.36	0.48

#### Standardized Total Effects of ETA on ETA

	KP	L
	-----	-----
KP	--	--
L	0.75	--

#### Standardized Total Effects of ETA on Y

	KP	L
	-----	-----
KP1	0.71	--
KP2	0.35	--
KP3	0.40	--
L1	0.25	0.33
L2	0.39	0.52
L3	0.62	0.82
L4	0.67	0.89

Completely Standardized Total Effects of ETA on Y

	KP	L
	-----	-----
KP1	0.65	--
KP2	0.32	--
KP3	0.36	--
L1	0.23	0.30
L2	0.34	0.45
L3	0.59	0.79
L4	0.66	0.87

Standardized Indirect Effects of ETA on Y

	KP	L
	-----	-----
KP1	--	--
KP2	--	--
KP3	--	--
L1	0.25	--
L2	0.39	--
L3	0.62	--
L4	0.67	--

Completely Standardized Indirect Effects of ETA on Y

	KP	L
	-----	-----
KP1	--	--
KP2	--	--
KP3	--	--
L1	0.23	--
L2	0.34	--
L3	0.59	--
L4	0.66	--

Standardized Total Effects of KSI on Y

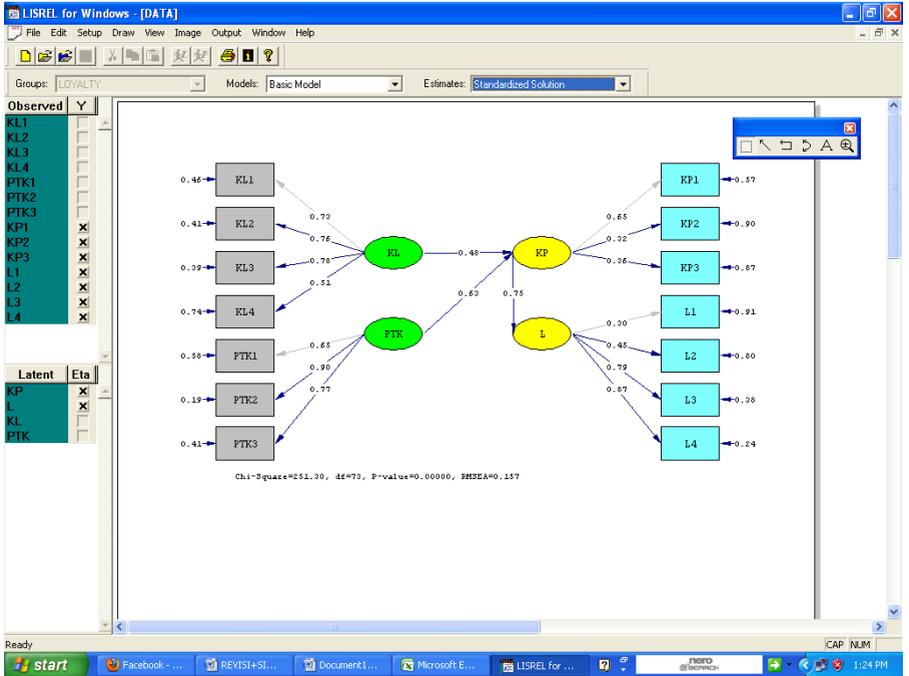
	KL	PTK
	-----	-----

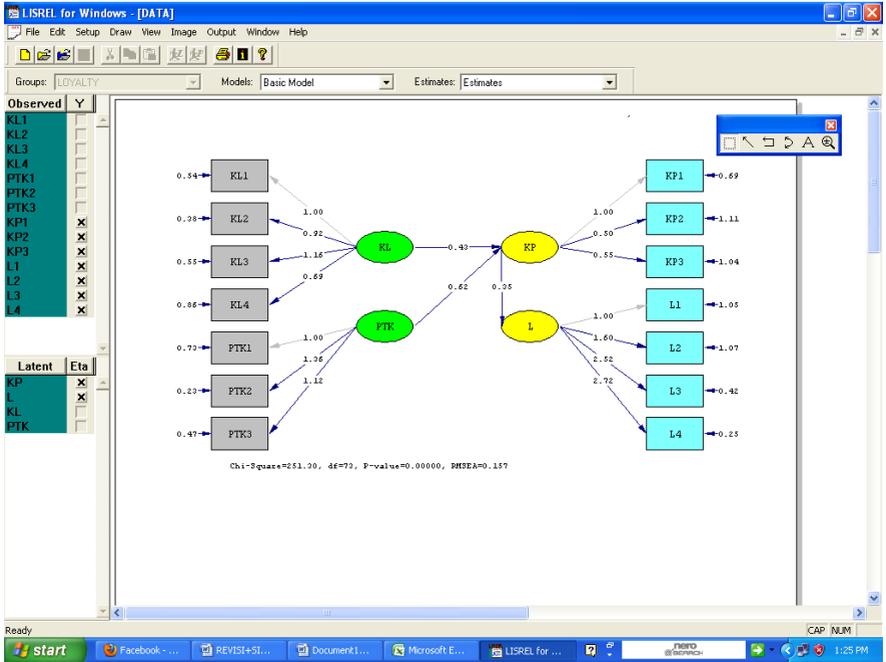
KP1	0.34	0.45
KP2	0.17	0.22
KP3	0.19	0.25
L1	0.12	0.16
L2	0.19	0.25
L3	0.30	0.39
L4	0.32	0.43

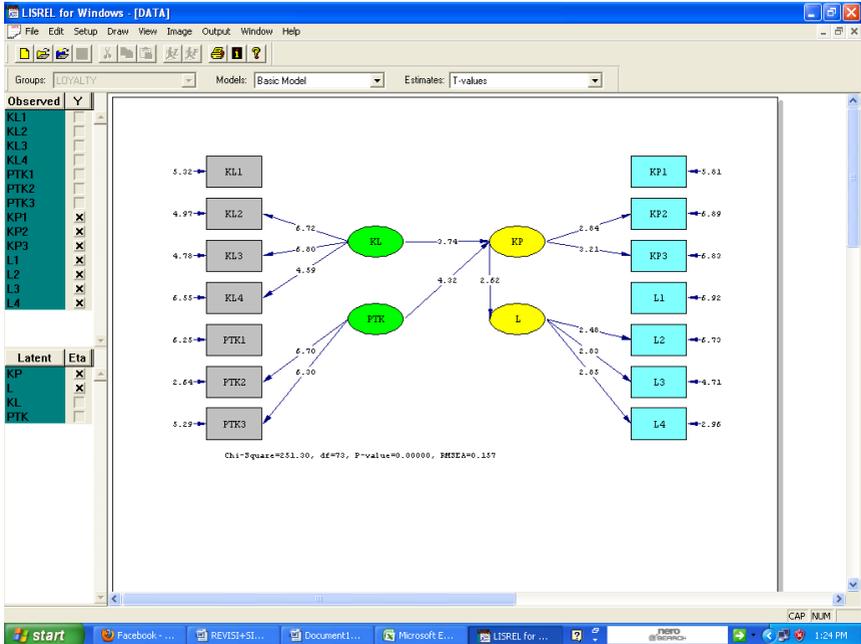
Completely Standardized Total Effects of KSI on Y

	KL	PTK
	-----	-----
KP1	0.31	0.41
KP2	0.15	0.20
KP3	0.17	0.23
L1	0.11	0.14
L2	0.16	0.21
L3	0.29	0.38
L4	0.32	0.42

Time used: 0.016 Seconds









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

Festus Olorunniwo

*Department of Business Administration, College of Business,  
Tennessee State University, Nashville, Tennessee, USA, and*

Maxwell K. Hsu

*Department of Marketing, College of Business and Economics,  
University of Wisconsin-Whitewater, Whitewater, Wisconsin, USA*

## 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](http://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 Vepsalainen, 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).

- 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*.

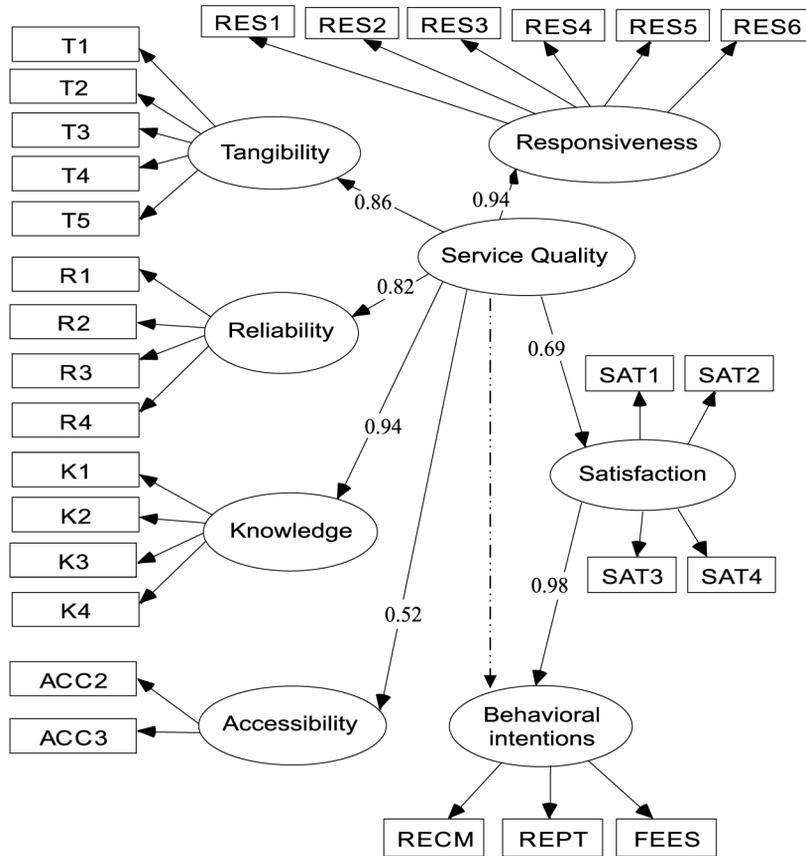
To examine *P2*, we examined the hypothesized casual model as shown in Figure 1. It is noteworthy that the indirect effect of SQ on BI (i.e.  $SQ \rightarrow SAT \rightarrow BI$ ) is so significant as to play down the direct effect of SQ on BI (i.e.  $SQ \rightarrow BI$ ). Interestingly, though the coefficient 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.

### References

- Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-23.
- Blanchard, R. and Galloway, R. (1994), "Quality in retail banking", *International Journal of Service Industry Management*, Vol. 5 No. 4, pp. 5-23.
- CIA (2004), "CIA world fact book", available at: [www.indexmundi.com/united\\_states/gdp\\_composition\\_by\\_sector.html](http://www.indexmundi.com/united_states/gdp_composition_by_sector.html) (accessed June 4, 2005).
- Collier, D.A. and Meyer, S.M. (1998), "A service positioning matrix", *International Journal of Operations & Productions Management*, Vol. 18 No. 12, pp. 1123-244.
- Cook, D.P., Goh, C. and Chung, C.H. (1999), "Service typologies: a state of the art survey", *Production and Operations Management*, Vol. 8 No. 3, pp. 318-38.

- Cronin, J.J. Jr and Taylor, S.A. (1992), "Measuring service quality: a reexamination and extension", *Journal of Marketing*, Vol. 56 No. 3, pp. 55-68.
- Cronin, J.J. Jr, Brady, M.K. and Hult, T.M. (2000), "Assessing the effects of quality, value, customer satisfaction on consumer behavioral intentions in service environment", *Journal of Retailing*, Vol. 76 No. 2, pp. 193-218.
- Dabholkar, P.A., Shepherd, C.D. and Thorpe, D.I. (2000), "A conceptual framework for service quality: an investigation of critical conceptual and measurement issues through a longitudinal study", *Journal of Retailing*, Vol. 76 No. 2, pp. 139-73.
- Farquhar, J.D. (2004), "Customer retention in retail financial services: an employee perspective", *International Journal of Bank Marketing*, Vol. 22 No. 2, pp. 86-99.
- Fitzsimmons, J.A. and Fitzsimmons, M.J. (2004), *Service Management: Operations, Strategy, and Information Technology*, 4th ed., Irwin McGraw-Hill, Boston, MA.
- Grönroos, C. (1982), *Strategic Management and Marketing in Service Sector*, Marketing Science Institute, Cambridge, MA.
- Grönroos, C. (1990), *Service Management and Marketing*, Lexington Books, Lexington, MA.
- Jamal, A. and Naser, K. (2002), "Customer satisfaction and retail banking: an assessment of some of the key antecedents of customer satisfaction in retail banking", *International Journal of Bank Marketing*, Vol. 20 Nos 4/5, pp. 146-60.
- Kaiser, H.F. (1960), "The application of electronic computers to factor analysis", *Educational and Psychological Measurement*, Vol. 20, pp. 141-51.
- Kang, G. and James, C. (2004), "Service quality dimensions: an examination of Grönroos's service quality model", *Managing Service Quality*, Vol. 14 No. 4, pp. 266-77.
- Kellogg, D.L. and Chase, R.B. (1995), "Constructing an empirically derived measure for customer contact", *Management Science*, Vol. 41 No. 11, pp. 1734-49.
- Kellogg, D.L. and Nie, W. (1995), "A framework for strategic service management", *Journal of Operations Management*, Vol. 13 No. 4, pp. 323-37.
- La, K.V. and Kandampully, J. (2004), "Market oriented learning and customer value enhancement through service recovery management", *Managing Service Quality*, Vol. 14 No. 5, pp. 390-401.
- Lapierre, J. (1996), "Service quality: the construct, its dimensionality, and its measurement", in Swartz, T.A., Bowen, D.E. and Brown, S.W. (Eds), *Advances in Services Marketing and Management*, Vol. 5, JAI Press, Greenwich, CT, pp. 45-70.
- Levesque, T. and McDougall, G.H.G. (1996), "Determinants of customer satisfaction in retail banking", *International Journal of Bank Marketing*, Vol. 14 No. 7, pp. 12-20.
- Lovelock, C.H. (1983), "Classifying services to gain strategic marketing insights", *Journal of Marketing*, Vol. 47, pp. 9-20.
- Miller, J.L., Craighead, C.W. and Karwan, K.R. (2000), "Service recovery: a framework and empirical investigation", *Journal of Operations Management*, Vol. 18 No. 4, pp. 387-400.
- Mills, P.K. and Marguiles, N. (1980), "Toward a core typology of service organizations", *Academy of Management Review*, Vol. 5 No. 2, pp. 255-65.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality", *Journal of Retailing*, Vol. 64, Spring, pp. 12-40.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1993), "Research note: more on improving service quality measurement", *Journal of Retailing*, Vol. 69 No. 1, pp. 140-7.

- 
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1994), "Reassessment of expectations as a comparison standard in measuring service quality: implications for further research", *Journal of Marketing*, Vol. 58 No. 1, pp. 111-24.
- Schmenner, R.W. (1986), "How can service businesses survive and prosper", *Sloan Management Review*, Vol. 27 No. 3, pp. 21-32.
- Schmenner, R.W. (2004), "Service businesses and productivity", *Decision Sciences*, Vol. 35 No. 3, pp. 333-47.
- Singh, J. (1988), "Consumer complaint intentions and behavior: definitional and taxonomical issues", *Journal of Marketing*, Vol. 52, January, pp. 93-107.
- Swann, J. (2005), "Customers look to their banks for protection from identity theft", *Community Banker*, Vol. 14 No. 1, p. 46.
- Tinnila, M. and Vepsalainen, A.P.J. (1995), "A model for strategic positioning of service processes", *International Journal of Service Industry Management*, Vol. 6 No. 4, pp. 57-80.
- Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996), "The behavioral consequences of service quality", *Journal of Marketing*, Vol. 60 No. 2, April, pp. 31-46.
- Zhou, L. (2004), "A dimension-specific analysis of performance-only measurement of service quality and satisfaction in China's retail banking", *Journal of Services Marketing*, Vol. 18 No. 7, pp. 534-46.

#### About the authors

Festus Olorunniwo is a Professor of Operations Management and Head of Department of Business Administration at Tennessee State University and formerly the Director of University of Tennessee at Martin's Center for Quality and Productivity. He obtained his Doctorate degree in Management Science (Operations Research) from the University of Texas at Austin (1981). Dr Olorunniwo's research and consulting interests and capabilities are in the operations management area including production and productivity improvement in manufacturing and service operations; supply chain management; and management of quality programs. He has provided his consulting services to several companies in West Tennessee, Singapore, and Nigeria. His professional career has taken him to such places as Russia, Ukraine, Singapore, the Netherlands, Malawi, and Nigeria. He has served as a consultant to UNDP. Dr Olorunniwo has published over 50 research articles in refereed journals and proceedings. His research articles have been published in, for example, *Production & Inventory Management Journal*, *International Journal of Production Research*, *Journal of Operations Management*, *Journal of Quality Technology*, *Journal of Engineering Optimization*, *Reliability Engineering and System Safety*, and the *International Journal of Reliability and Quality Management*.

Maxwell K. Hsu (DBA, Louisiana Tech University, 1999) is Associate Professor of Marketing at University of Wisconsin-Whitewater. His work has appeared in more than a dozen scholarly journals such as the *Applied Economics Letters*, *Information & Management*, *International Journal of Advertising*, *Journal of International Marketing*, *Journal of Nonprofit and Public Sector Marketing*, *Journal of Services Marketing*, and other journals. His areas of research interest include diffusion of innovations, international marketing, services marketing, and information technology. Maxwell K. Hsu is the corresponding author and can be contacted at: hsum@uww.edu

# The effects of service recovery on consumer satisfaction: a comparison between complainants and non-complainants

Ah-Keng Kau and Elizabeth Wan-Yiun Loh  
National University of Singapore, Singapore

## Abstract

**Purpose** – The primary objective of this study is to investigate the effects of service recovery on customer satisfaction. Specifically, it examines the perception of “justice” in service recovery and how it affects the level of satisfaction and behavioral outcomes. In addition, the study also explores whether the “recovery paradox” exists.

**Design/methodology/approach** – Data were collected through a survey using a structured questionnaire. The 428 respondents were analyzed according to whether they did or did not make a complaint to the service providers.

**Findings** – The findings showed that the complainants’ level of satisfaction with service recovery was significantly affected by perceived justice. The behavioral outcomes of the complainants in terms of trust, word-of-mouth (WOM) and loyalty were also found to be affected by their satisfaction with the service recovery. *T*-tests confirmed that the levels of trust, WOM and loyalty were significantly higher for those respondents who were satisfied with the service recovery compared with those who were dissatisfied. Further *t*-tests also indicated that respondents who were initially satisfied with the service expressed greater trust and positive WOM compared with the satisfied complainants. Finally, the study showed that dissatisfied complainants would exhibit a lower level of trust and were more likely to engage in negative word-of-mouth behavior compared with those who were dissatisfied initially but chose not to complain.

**Practical implications** – The findings in this paper confirmed the importance of perceived justice in service recovery. Satisfaction with service recovery also leads to a higher level of trust, positive word-of-mouth behavior and, to a lesser extent, the level of loyalty. Finally, the lack of support of the “recovery paradox” effect suggests that successful service recovery alone would not bring customer satisfaction to pre-service failure levels. It is therefore essential to provide service right at the first time.

**Originality/value** – This is a new study on the service provided by mobile phone service providers in an Asian environment. It also reinforces the important of perceive justice in service recovery and debunks the existence of the “recovery paradox” effect.

**Keywords** Customer satisfaction, Complaints

**Paper type** Research paper

An executive summary for managers can be found at the end of this article.

## Introduction

Customer satisfaction is crucial to the survival of any business organization. However, service failures are often unavoidable due to human and non-human errors. Such failures to perform a service inevitably lead to customer dissatisfaction. The consequences can be dire to a service provider. The breakdown in relationship can contribute to a rise in customer complaints, bad word-of-mouth communications and defections. It has been found that a dissatisfied customer may relate his or her bad experience with the service provider to 10 to 20 other people (Zemke, 1999), thus eroding potential patronage of the service provider. It has therefore been recognized that once a service failure occurs, it becomes crucial that service recovery, defined as the action taken by

the service provider to seek out dissatisfaction (Johnston, 1995) and as a response to poor service quality (Grönroos, 1988), be effectively carried out to reduce the damage in relationship and to pacify the dissatisfied customer. It has also been suggested that effective service recovery had led to higher satisfaction compared to service that had been correctly performed on the first time (Ettel and Silverman, 1981; McCollough and Bharadwaj, 1992). This phenomenon of service recovery paradox has also been discussed more recently by McCollough *et al.* (2000), Smith and Bolton (1998) and Tax *et al.* (1998).

The primary objective of this study is to determine the effects of service recovery on customer satisfaction in the mobile phone service industry in an Asian country – Singapore. Specifically, the study would examine the perception of “justice” in service recovery and how it affects the level of satisfaction. Second, it aims to determine the impact of satisfaction on behavioral outcomes of the affected consumers. Third, it proposes to investigate if satisfactory recovery efforts would create greater satisfaction for customers who complained about a service failure compared to those who were satisfied with the service provided in the first place, i.e. whether the service recovery paradox holds true. Finally, it purports to analyze if poor recovery efforts could create greater dissatisfaction for customers who complained (i.e. complainants) compared to those who did

The current issue and full text archive of this journal is available at [www.emeraldinsight.com/0887-6045.htm](http://www.emeraldinsight.com/0887-6045.htm)



Journal of Services Marketing  
20/2 (2006) 101–111  
© Emerald Group Publishing Limited [ISSN 0887-6045]  
[DOI 10.1108/08876040610657039]

not complain (non-complainants) but were dissatisfied with the service provided.

In the next section of this paper, we discuss the literature related to service recovery and the application of “justice” theory in service recovery management. The second section proposes the model for testing and explains the methodology adopted. This is followed by a discussion of the main findings. The final section examines the implications of the findings to service providers in general.

## Review of past works

Service recovery refers to the action taken by a service provider to address a customer complaint regarding a perceived service failure (Grönroos, 1988). It is the process by which steps are taken as a result of negative customer perception of initial service delivery. Recovery management is considered to have a significant impact on customers who experienced service failures because they are usually more emotionally involved and observant of service recovery efforts (Berry and Parasuraman, 1991). Understanding service recovery is particularly important for managers as the unique nature of service (inseparability of production and consumption) makes it impossible to ensure 100 percent error-free service (Fisk *et al.*, 1993).

Customers often use the equity theory (Adams, 1965) to evaluate service recovery efforts. Adams (1965) first proposed that people felt fairly treated in social exchange relationship when they perceived their own economic outcomes relative to their inputs are in balance. On the contrary, inequity is said to exist if the perceived inputs and outcomes in an exchange relationship are perceived to be unjust or unfair. As such, the presence of inequity is expected to result in both dissatisfaction and behavior that might provoke actions to bring about a balance. In a service marketing situation, customer inputs could be the costs associated with a service failure such as economic, time, energy, and psychic costs (Hoffman and Kelley, 2000). The outcomes could include specific recovery tactic used such as cash refund, apology, replacement, and so on. The outcomes must be perceived to be fair or just by the customers in order for them to be satisfied with the service recovery. According to Hoffman and Kelley (2000), perceived justice proposes that “the service recovery itself; the outcomes connected to the recovery strategy; and the interpersonal behaviors enacted during the recovery process and the delivery of outcomes are all critical” in service recovery assessment (p. 419). Hence, Tax *et al.* (1998, p. 62) proposed a three dimensional concept of justice:

Distributive justice (dealing with decision outcomes), procedural justice (dealing with decision-making procedures) and interactional justice (dealing with interpersonal behavior in the enactment of procedure and delivery of outcomes).

### Dimensions of perceived justice

Distributive justice is concerned primarily with the specific outcome of the recovery effort, i.e. what did the service provider do to pacify the offended customer and whether the consequent outcomes more than offset the costs incurred by the customer (Greenberg, 1990; Gilliland, 1993). Some often quoted distributive outcomes include compensation in the form of discounts, coupons, refund, free gift, replacement, apologies and so on (Blodgett *et al.*, 1997; Goodwin and Ross, 1992; Hoffman and Kelley, 2000; Tax *et al.*, 1998). The

assessment of whether the compensation is fair may be also affected by the customer’s prior experience with the firm, knowledge about how other customers were treated in similar situations and perception of the magnitude of his or her own loss (Tax *et al.*, 1998). Blodgett *et al.* (1997) found that in a retail setting, distributive justice had a significant effect on customers’ repatronage and negative word-of-mouth intentions.

Procedural justice focuses on the “perceived fairness of the policies, procedures, and criteria used by decision makers in arriving at the outcome of a dispute or negotiation” (Blodgett *et al.*, 1997, p. 189). Tax *et al.* (1998) described five elements of procedural justice including process control, decision control, accessibility, timing/speed and flexibility. Laventhal *et al.* (1980) concluded that procedures must be consistent, unbiased and impartial, representative of all parties concerned and based on correct information and ethical standard to be judged fair. It has also been found that procedural justice is important in service recovery as consumers who might be satisfied with the type of recovery strategy offered but still could be unhappy if the process endured to seek redress were unsatisfactory (Kelley *et al.*, 1993). However, Blodgett *et al.* (1997) found that in a retailing setting, procedural justice (timeliness) did not have a significant effect on customers’ repatronage intentions nor their negative word-of-mouth intentions.

Interactional justice focuses on the “fairness of the interpersonal treatment people receive during the enactment of procedures” (Tax *et al.*, 1998, p. 62). They further identified five elements of interactional justice: explanation/causal account, honesty, politeness, effort and empathy. In a service recovery situation, interactional justice would refer to the manner in which the recovery process is operationalized and recovery outcomes presented. This distinction is important as Bies and Shapiro (1987) found that people might view the procedure and outcome to be fair and yet felt being unfairly treated as a result of interactional factors. Other research has shown that the manners in which managers and employees communicate with customers (Clemmer, 1988; Goodwin and Ross, 1992) and efforts taken to resolve conflicts (Mohr and Bitner, 1995) affected customer satisfaction. For instance, when employees apologized for their mistakes, customers often ended up feeling more satisfied. Heskett *et al.* (1997) also confirmed that display of empathy, being polite and willingness to listen to customers were critical elements in service encounters. Blodgett *et al.* (1997) also discovered that interactional justice had the strongest effect on subjects’ repatronage and negative word-of-mouth intentions in their experimental study.

### Behavioral outcomes resulting from satisfaction with service recovery

As discussed in previous section, perceived justice would affect the level of customer’s satisfaction of a service recovery strategy. Blodgett *et al.* (1995) observed that satisfactory or unsatisfactory resolution of the dispute would affect whether the complainant would repatronize the seller (or exit) and whether that person would engage in bad or good word-of-mouth communication. Bitner *et al.* (1990) also found that customers were likely to react positively if initial service failures were followed by amiable recovery. Tax *et al.* (1998) argued that repurchase intentions could be influenced by “structural factors such as switching costs, availability of

alternatives or contractual agreements". As such, they advocated the inclusion of commitment and trust to be the two elements in the study of customer satisfaction. In this study, trust, word-of-mouth intention and consumer loyalty (commitment) would be investigated as consequences of customer satisfaction.

Trust has been a central construct in the study of marketing and customer relationships since its importance was emphasized by Dwyer *et al.* (1987). Research has shown that relationship marketing is built on the foundation of trust (Crosby *et al.*, 1990; Morgan and Hunt, 1994). Trust exists when "one party has confidence in an exchange partner's reliability and integrity" (Morgan and Hunt, 1994, p. 23). Moreover, repeated satisfaction over times would strengthen the perceived reliability of the provider and contribute further to trust formation (Ganesan, 1994). As such, satisfaction with service recovery would lead to the building of trust.

Word-of-mouth (WOM) refers to the informal communication between consumers about the characteristics of a business or a product (Westbrook, 1987). It provides consumers with information about a firm that assist them to decide if they should patronize it (Lundeen *et al.*, 1995; Zeithaml *et al.*, 1993). In a service setting, it is important that if failure occurs steps must be taken to pacify the dissatisfied customers. If not, it is highly likely that they will either exit or engaged in negative WOM to the detriment of the service provider. The end result would be lost sales and profits. On the other hand, consumers who receive fair service recovery are more likely to repatronize the service provider and even engage in positive WOM behavior, thus spreading goodwill for the service provider. Blodgett *et al.* (1997) confirmed that interactional justice had large impact on WOM intentions. As such, satisfaction with service recovery would encourage positive WOM communication.

Customer loyalty underlies a commitment to a particular vendor and is often reflected as the continued patronage of the same provider. Customer loyalty is important as the long-term survival of the firm lies in its ability to retain and attract profitable customers. Loyal customers generally possess lower marketing requirements and are deemed to be more profitable than new customers (Dawkins and Reichheld, 1990). Reichheld and Sasser (1990) also reported that a service company could boost profits by 100 percent just by increasing customer retention rate by 5 percent. Retention is believed to be a function of existing customers' level of satisfaction. Other studies have also shown that an important variable that contributes to customer and employee commitment is satisfaction (Kelley and Davis, 1994; Kelley *et al.*, 1993). When a firm develops a good system of resolving customer complaints, it leads to greater customer loyalty (Tax and Brown, 2000). On the other hand, Tax *et al.* (1998) discovered that as dissatisfaction with complaint handling increases, commitment would decrease. Similarly, Andreassen (1999) also affirmed that satisfaction with service recovery had a strong impact on customer loyalty. As such, it can be hypothesized that satisfaction with service recovery would lead to higher consumer loyalty.

### The proposed model

Previous literature on consumer satisfaction/dissatisfaction has focused predominantly on complainants who are dissatisfied with the service recovery process. In contrast, there is a lack of studies on non-complainants who are

satisfied (ordinary satisfied customers) as well as those who are dissatisfied (non-complaining dissatisfied customers) with the service provider. As such, customers in a service setting can be broadly divided into two distinct classes: those who complain (complainants) and those who do not complain (non-complainants). Of the non-complainants, they are either satisfied with the service (ordinary satisfied customers) or dissatisfied with the service provider but did not lodge a complaint (dissatisfied non-complainants). Of the complainants, they are either satisfied (satisfied complainants) with the service recovery provided or dissatisfied (dissatisfied complainants). These four types of consumers may experience different service encounters and would be expected to display different levels of satisfaction with the service provider. This satisfaction or dissatisfaction would lead to different behavioral outcomes. Specifically, they would exhibit different levels of trust, WOM intentions and loyalty to the service provider. This research model is illustrated in Figure 1. This study would examine the differences in the behavioral outcomes among the four groups of consumers.

## Method of study

### The sampling process

Data were collected through survey using a structured questionnaire administered to students and the general public. The only condition for the inclusion of respondents was that they must have purchased a mobile phone before. The survey was posted on the internet as it is a convenient, fast and cost-effective means of eliciting responses from respondents (Zikmund, 1999). The survey was posted on a website in Singapore over a month from January to February, 2002. To generate more traffic to the website, subjects were informed of the survey via e-mail. Students from the university database were selected randomly and approached to take part in the survey. Snowball sampling was also used to obtain responses from the non-student population. Subjects were also encouraged to forward the survey to others.

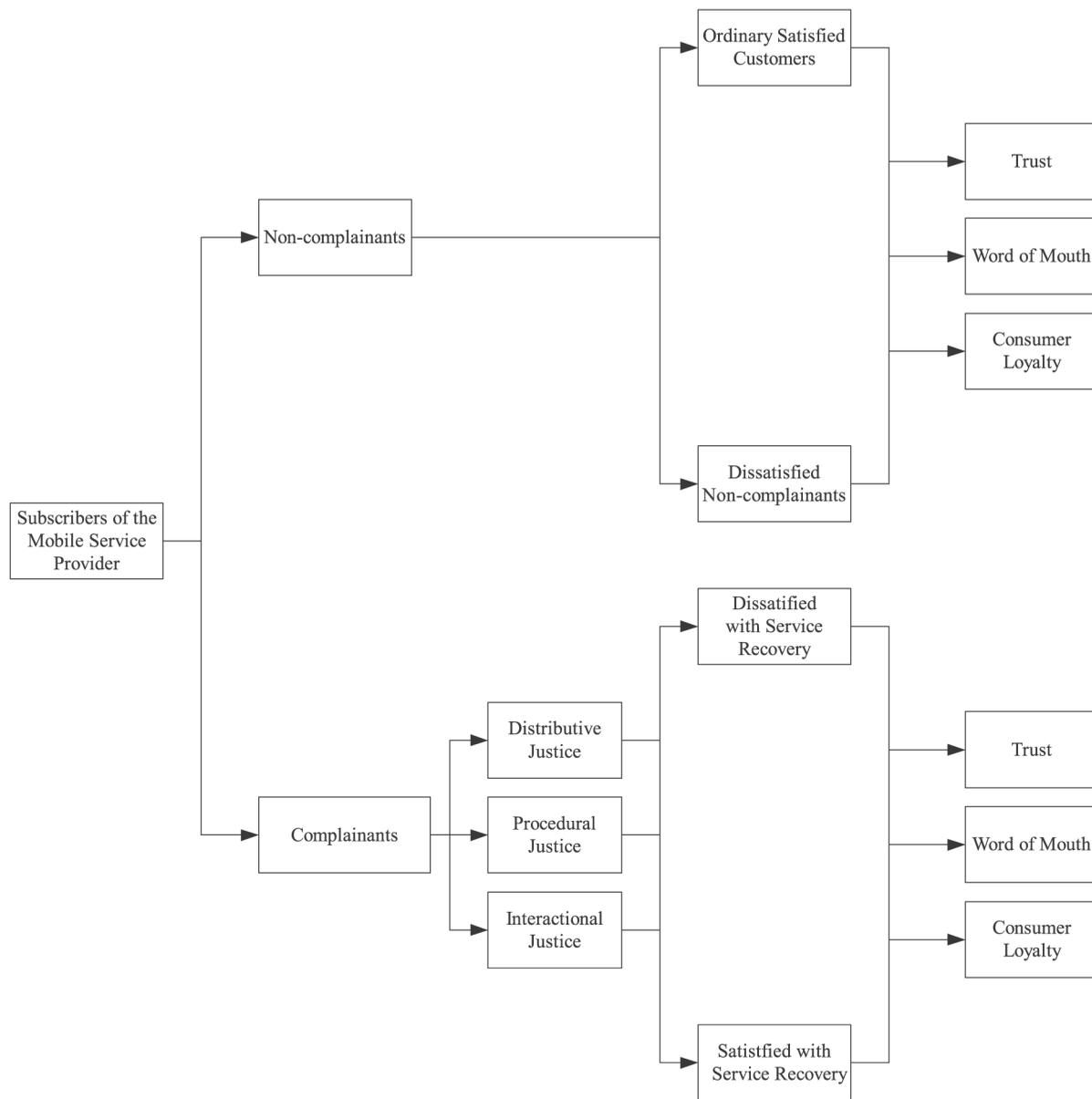
A total of 435 responses were collected. Out of these, seven were rejected because of missing data in the questionnaire. Thus, the total usable sample for analysis was 428. Subsequently, the sample was segregated into two groups. One group comprised of respondents who had experienced service failure and had complained to the mobile service providers (Complainants,  $n = 153$ ). The other group consisted of respondents who did not lodge any complaint with the service provider (non-complainants,  $n = 275$ ).

### The questionnaire

The initial portion of the questionnaire requested respondents to provide background information regarding their mobile phone purchases. This included the name of the service provider, price plan chosen, and month and year of purchase. This was followed by a series of questions relating to different aspects and overall satisfaction with the service provider. The objective of soliciting such information was to help the respondents to recall their service experience and find out their level of satisfaction with their respective service provider.

In section 2, a question was asked to screen out respondents who had complained to the mobile service providers versus those who did not. The latter group was asked to proceed to another section to fill up questions regarding their level of

Figure 1 The research model



trust, WOM behavior and loyalty towards the mobile service providers. On the other hand, if respondents had complained to the service providers, they had to report the details of their recent complaint experience. Such details included the medium used to lodge the complaint (e.g. phone, in person or e-mail), the problem that led to the complaint (e.g. billing and payment issues, customer problems etc.), and the personnel to whom the complaint was made (e.g. manager, customer service personnel, retail employees etc.).

Questions in section 3 measured the three dimensions of perceived justice. Both interactional and procedural justice were measured using multi-item scales. Politeness (Blodgett *et al.*, 1997), effort, empathy (Parasuraman *et al.*, 1988) and explanation (Bies and Shapiro, 1987) were used to measure interactional justice. As for procedural justice, accessibility (Bitner *et al.*, 1990), timing (Taylor, 1994) and process

control (Goodwin and Ross, 1992) were used to measure this dimension. The multi-items used by this study are similar to those adopted by Tax *et al.* (1998). As for distributive justice, this study only used items that reflected broad evaluations of the fairness of outcomes. These included questions on whether the outcome met the complainant’s needs. These items were built on measures used in other marketing studies (Clemmer, 1988; Oliver and Swan, 1989). Next, the constructs “satisfaction with service recovery” (Crosby *et al.*, 1990), “trust” (Tax *et al.*, 1998), “word-of-mouth” (Blodgett *et al.*, 1997; Walker and Harrison, 2001) and “consumer loyalty” (Dick and Basal, 1994; Fornell, 1992) were measured with items adapted specifically for this research study.

The last section of the survey asked respondents to provide information about their demographic characteristics. This

information included gender, education, age, ethnic group, type of residence, monthly income and occupation.

The questionnaire was pre-tested among a group of 20 potential respondents but no major problems were detected. Several minor modifications were made to ensure clarity of the items in the final version of the questionnaire.

## The main findings

The data were analyzed using SPSS. The profiles of the respondents would first be presented in this section, followed by results of the statistical analysis.

### Profiles of respondents

Table I shows the demographic characteristics of the respondents in total as well as in separate groups as complainants and non-complainants. There were almost equal number of males and females in the sample. The majority of the respondents were at least tertiary educated. In terms of age distribution, almost seven out of ten (or 68 percent) were 20 to 24 years old. About 10 percent were aged 30 or older. About three out of five in the sample (or 60.3 percent) earned less than S\$1,000 a month. This is not surprising as about half the respondents were students. Those making S\$3,000 or more a month accounted only for about 8

Table I Demographic characteristics of respondents

Characteristics	Number	Total (%)	Group 1 (%)	Group 2 (%)
<b>Gender</b>				
Male	218	50.9	35.8	64.2
Female	210	49.1	35.7	64.3
<b>Education level attained</b>				
Secondary and below	28	6.5	39.3	60.7
Junior college	104	24.3	32.7	67.3
Polytechnic diploma	82	19.2	35.4	64.6
University degree and/or above	203	47.4	36.9	63.1
Others	11	2.6	36.4	63.6
<b>Age group</b>				
15-19	15	3.5	33.3	66.7
20-24	291	68	32.6	67.4
25-29	77	18	39.0	61.0
30-34	16	3.7	43.8	56.2
35-39	7	1.6	57.1	42.9
≥ 40	22	5.2	54.5	45.5
<b>Personal monthly income</b>				
≤ \$999	258	60.3	34.5	65.5
\$1,000-\$1,999	57	13.3	33.3	66.7
\$2,000-\$2,999	79	18.5	34.2	65.8
\$3,000-\$3,999	24	5.6	58.3	41.7
\$4,000 and above	10	2.3	40	60
<b>Occupation</b>				
Student	222	51.9	33.3	66.7
White-collar jobs	194	45.3	38.1	61.9
Blue-collar jobs	12	2.8	41.7	58.3

Notes: Group 1 refers to the complainants ( $n = 153$ ); Group 2 refers to the non-complainants ( $n = 275$ ); Total consists of all the respondents ( $n = 428$ )

percent of the sample. All in all, the sample consisted mainly of students, in the age group of 20-24 and making less than S\$1,000 a month. When the two groups (complainants versus non-complainants) were compared, no significant differences were detected in most of the demographic characteristics, with the exception of income where those earning S\$3,000 or more were observed to be more likely to lodge a complaint.

### Factor analysis

Factor analysis was conducted on 32 statements related to the three dimensions of perceived justice. Principal axis factoring with varimax rotation was employed. The Bartlett test of sphericity confirmed that factor analysis was appropriate. The value of the KMO statistics was 0.943 that fell within the meritorious range of a good model. Four factors were extracted and explained 64.2 percent of the variance. Table II shows the factors extracted and the associated loadings. The Cronbach's alpha values for these factors were all around 0.90 thus confirming that these variables had high reliability.

The first factor extracted was procedural justice. This factor uncovered only one dimension for procedural justice similar to that found by Tax *et al.* (1998). Two factors were extracted for interactional justice. One was related to statements measuring explanation and effort while the other was concerned with empathy and politeness. The last factor referred to the outcomes of the service recovery and was clearly labeled as distributive justice.

Similarly, factor analysis was also conducted on the statements measuring behavioral outcomes (Table III). The KMO statistics was 0.939. Three factors were extracted with loadings ranging from 0.467 to 0.781. The factors extracted explained 72.56 percent of the total variance. The Cronbach alpha values ranged from 0.763 to 0.845, thus suggesting that these constructs had high internal consistency. The three factors were labeled as hypothesized: word-of-mouth, consumer loyalty and trust.

### Perceived justice on satisfaction and behavioral outcomes

Multiple regression analyses were first used to establish the relationship between perceived justice and customer satisfaction. This was followed by an examination of how satisfaction could have impacted on customer's behavioral outcomes. Specifically, all the different aspects of perceived justice (procedural, interactional and distributive) were regressed on satisfaction with service recovery. Subsequently, the impact of satisfaction on trust, WOM and consumer loyalty would be established. The complete results are tabulated in Table IV.

The  $R^2$  of the first regression model is 0.809, suggesting a very good fit of the model. This confirms that the complainants' level of satisfaction with service recovery was significantly affected by the four dimensions of perceived justice (procedural, empathy and politeness, explanation and effort and distributive). The values of VIF (variance inflation factor) ranged from 2.58 to 3.65 indicating the non-existence of collinearity. The standardized coefficients were respectively 0.221, 0.187, 0.196 and 0.395. These confirm that distributive justice makes the strongest contribution to satisfaction with service recovery while interactional justice contributes less. This finding is similar to that discovered by Mattila (2001) in that distributive justice was found to have greater impact on satisfaction with problem handling in the

Table II Factor and reliability analysis of the dimensions of justice

	Factor loadings
<b>1. Procedural justice – PROC (Factor 1 explains 49.66 percent of total variance; Cronbach's alpha = 0.910)</b>	
I was not given the opportunity to tell my side of the story	0.691
It was difficult to determine where to lodge my complaint	0.690
They did not let me explain the events which led to my complaint	0.659
They were very slow in responding to my complaint	0.592
The mobile service provider made it easy for me to voice my complaint	0.588
It was hard for me to figure out to whom I should complain in the company	0.551
I got a chance to tell them my problems	0.532
The complaint process was easy to access	0.530
They listened to my entire complaint	0.526
The time taken to resolve the problem was longer than necessary under the conditions	0.485
The arrangement for handling customers who are waiting to be served worked poorly	0.474
<b>2. Explanation and effort – EXP_EFF (Factor 2 explains 5.75 percent of total variance; Cronbach's alpha = 0.90)</b>	
They told me why the service had failed in the first place	0.683
The employees seemed very interested in helping me	0.613
I was given a reasonable explanation as to why the original problem occurred	0.608
The employees did not tell me the cause of the service failure	0.601
They tried hard to resolve the problem	0.539
No reason was given for the poor service that I had received	0.534
The employees were attentive in providing good service	0.531
<b>3. Empathy and politeness – EMP_POL (Factor 3 explains 4.97 percent of total variance; Cronbach's alpha = 0.898)</b>	
The employees were courteous to me	0.789
I felt that I was treated rudely	0.718
The employees were not polite to me	0.582
The employees showed little kindness or understanding	0.569
The employees listened politely to what I had to say	0.478
They seemed to be very concerned about my problem	0.422
The employees seemed very understanding about the problems I had experienced	0.418
<b>4. Distributive justice – DISTRI (Factor 4 explains 3.88 percent of total variance; Cronbach's alpha = 0.907)</b>	
In resolving the complaint, they gave me what I needed	0.747
I did not receive what I required	0.699
The result of the complaint was not up to expectation	0.625
Taking everything into consideration, the result was quite fair	0.613

Table III Factor and reliability analysis of behavioral outcomes

	Factor loadings
<b>1. Word of mouth (Factor 1 explains 54.42 percent of total variance; Cronbach's alpha = 0.845)</b>	
Although I use this mobile service provider, I recommend others not to use it	0.781
I complain to my friends and relatives about this mobile service provider	0.608
My recommendations about this mobile service provider would have been positive	0.561
I have only good things to say about this mobile service provider	0.537
<b>2. Consumer loyalty (Factor 2 explains 9.26 percent of total variance; Cronbach's alpha = 0.793)</b>	
I will continue to stay with this mobile service provider	0.758
I would not change mobile service provider even after my contract expires	0.689
In the near future, I intend to use more of the services provided by this mobile service provider	0.565
I consider myself to be a loyal customer of this mobile service provider	0.523
<b>3. Trust (Factor 3 explains 6.26 percent of total variance; Cronbach's alpha = 0.763)</b>	
I believe the mobile service provider can be relied on to keep its promises	0.701
I believe that this mobile service provider is trustworthy	0.569
I feel pretty negative about this mobile service provider	0.467

Table IV Model testing for complainants using multiple regression ( $n = 153$ )

Dependent variable	Independent variable	$\beta$	Beta	$p$ -value	$R^2$	$F$ -value	Sig.
<b>Regression 1</b>							
Satisfaction	PROC	0.303	0.221	0.000	0.809	156.391	0.00
	EMP_POL	0.244	0.187	0.006			
	EXP_EFF	0.243	0.196	0.005			
	DISTR1	0.399	0.395	0.000			
<b>Regression 2</b>							
Trust	Satisfaction	0.740	0.752	0.00	0.565	195.999	0.00
<b>Regression 3</b>							
WOM	Satisfaction	0.677	0.746	0.00	0.556	189.167	0.00
<b>Regression 4</b>							
Consumer loyalty	Satisfaction	0.406	0.506	0.00	0.256	51.86	0.00

case of restaurant and dry-cleaning service. However, her result in the case of hair styling service indicated that interactional justice was more important in explaining satisfaction.

The remaining three linear regression analyses confirmed the significant relationship between satisfaction and trust, WOM and loyalty respectively. For trust and WOM, the  $R^2$  values were respectively 0.565 and 0.556. Moreover, the complainants' level of trust ( $\beta = 0.752$ ,  $p < 0.005$ ) and WOM behavior ( $\beta = 0.746$ ,  $p < 0.05$ ) were significantly affected by their level of satisfaction with service recovery provided by the mobile phone service firm. Similarly, the extent of loyalty was also significantly related to their level of satisfaction, although the weight was not as large as those of trust and WOM behavior. In this case, the  $R^2$  was only 0.256 indicating the satisfaction was able to explain only 25.6 percent of the variance. Nevertheless, the beta coefficient of 0.506 was still significant at  $p < 0.05$ .

#### Behavioral outcomes of complainants and non-complainants

Table V shows the differences in mean values between complainants who were satisfied with the service recovery and those who were dissatisfied. The satisfied complainants ( $n = 90$ ) were found to have significantly higher mean values in trust, WOM and loyalty compared to their counterparts who were dissatisfied with the service recovery ( $n = 52$ ). The  $t$ -tests were found to be significant at the  $p < 0.00$  level.

Table VI shows the  $t$ -test results of the differences in mean values in trust, WOM and loyalty between the satisfied complainants and those who were initially satisfied with the service and therefore did not need to make a complaint (ordinary satisfied customers). The ordinary satisfied customers ( $n = 216$ ) were found to have greater trust and

positive WOM of the mobile phone service provider than the satisfied complainants. As such, the "recovery paradox" does not hold here. However, there was no significant difference in the mean values between these two groups in their loyalty or commitment (3.536 versus 3.529 at  $p = 0.459$ ).

Table VII depicts a comparison of the differences between dissatisfied complainants ( $n = 52$ ) and the non-complainants who were also dissatisfied but did not lodge any complaints ( $n = 56$ ) in their post-service behaviors. The latter group (dissatisfied non-complainants) displayed a greater degree of trust (mean value of 2.80) compared to those of the dissatisfied complainants (mean value of 2.47), although both at a low level of trust (below 3.00). The difference between the two groups was significant. Similarly, the same observation was found to be true for WOM behavior. The dissatisfied non-complainants reported a mean value of 2.78 compared to 2.40 for the dissatisfied complainants. The  $t$ -test showed the difference to be significant. It is therefore evident that dissatisfied complainants would exhibit lower level of trust and more likely to engage in negative WOM behavior. However, there was no significant difference between the two groups in the extent of their loyalty to the mobile phone service providers (2.65 versus 2.68 with  $t = 0.14$ ;  $p = 0.451$ ).

#### Discussion and conclusion

Our findings in this study confirm that distributive justice is significantly and positively related to satisfaction with service recovery. In fact, it has the largest impact on satisfaction suggesting that customers view fairness of outcomes in the provision of mobile phone services to be the most important component. This finding is consistent with results of previous studies where distributive justice was found to have the greatest impact on customer satisfaction (Clemmer, 1993; Mattila, 2001). The two dimensions of interactional justice

Table V Independent samples  $t$ -test for complainants (dissatisfied vs satisfied)

Variables	Complainants Dissatisfied ( $n = 52$ )		Complainants Satisfied ( $n = 90$ )		$t$ -test $t$ -value	1-tailed $p$ -value
	Mean	SD	Mean	SD		
Trust	2.474	0.908	3.693	0.675	-9.107	0.00
Word-of-mouth	2.399	0.786	3.567	0.650	-9.539	0.00
Consumer loyalty	2.683	0.797	3.536	0.565	-7.432	0.00

Table VI Independent samples *t*-test for complainants (satisfied) vs non-complainants (satisfied)

Variables	Complainants Satisfied ( <i>n</i> = 90)		Non-complainants Satisfied ( <i>n</i> = 216)		t-test	
	Mean	SD	Mean	SD	t-value	1-tailed <i>p</i> -value
Trust	3.693	0.675	3.866	0.5263	−2.406	0.009
Word-of-mouth	3.567	0.650	3.735	0.482	−2.500	0.007
Consumer loyalty	3.536	0.565	3.529	0.528	0.103	0.459

Table VII Independent samples *t*-test for complainants (dissatisfied) vs non-complainants (dissatisfied)

Variables	Complainants Dissatisfied ( <i>n</i> = 52)		Non-complainants Dissatisfied ( <i>n</i> = 56)		t-test	
	Mean	SD	Mean	SD	t-value	1-tailed <i>p</i> -value
Trust	2.474	0.908	2.8036	0.746	−2.064	0.021
Word-of-mouth	2.399	0.786	2.781	0.650	−2.741	0.004
Consumer loyalty	2.683	0.797	2.665	0.654	0.124	0.451

were also found to have significant but lower impact on customer satisfaction. Similarly, procedural justice also played a significant role in influencing the level of satisfaction with service recovery.

Analysis of the data also indicated that satisfaction with service recovery is positively related to trust. This finding is consistent with that discovered by Tax *et al.* (1998). As such, remedying a service failure could help to reinstall the trust of customers on the service provider. Similarly, satisfaction with service recovery also leads to positive word-of-mouth behavior. This is important as positive word-of-mouth not only helps to attract new customers but also assists in the creation of positive image about the firm concerned. Finally, satisfaction with service recovery also reinforces consumer loyalty and commitment. However, the extent of the impact of satisfaction on loyalty is found to be not as strong as that on trust and word-of-mouth behavior. This could be due to factors other than satisfaction with service recovery. Additional research may need to be embarked to identify these other important factors.

This study also shows that behavioral outcomes in terms of trust, word-of-mouth and loyalty are higher for complainants who are satisfied compared to those who are dissatisfied. The former group reported significantly higher mean values of trust and word-of-mouth behavior. This finding is consistent with that reported by Andreassen (2001). However, the extent of trust and positive word-of-mouth behavior are both higher for customers who are satisfied originally with the service as opposed to those who were satisfied after they lodged complaints with the service providers. This finding which is similar to that reported by Maxham (2001), Zeithaml *et al.* (1996), Smart and Martin (1993) and Fornell (1992) does not support the concept of “recovery paradox”. This lack of “recovery paradox” effect suggests that service providers must aim to provide service right on the first occasion and not hope to rely on recovery efforts to remedy service failures. Such efforts could not restore customer trust and positive word-of-mouth to the pre-service failure levels. As such, service providers must strive to identify potential service pitfalls and design remedies before service failure could affect the customers (Hoffman *et al.*, 1997; Zeithaml

and Bitner, 1996). Finally, the level of trust and positive word-of-mouth for complainants who are dissatisfied with the service recovery are found to be lower than customers who are dissatisfied with the service in the first place but did not lodge any complaints. This emphasizes that service recovery should not be neglected and bad service recovery efforts might lead to more detrimental consequences such as loss of trust and bad publicity through negative word-of-mouth communications.

What are the implications of our findings? First, the importance of perceived justice in service recovery cannot be overlooked. In the case of the provision of mobile phone service, it is noted that in cases of service failures, customers are more particular of the outcomes although they also care for interactional as well as procedural justice. Some of the outcomes looked out by the respondents were “provision of free time”, “provision of a replacement set of the mobile phone being serviced”, “showing proof that customers were correctly billed instead of asking them to purchase a detailed billing” and so on. Similarly, management of the procedure of service recovery and deployment of trained and skilled personnel to handle customer complaints are important to ensure satisfaction with the service recovery. This point is reinforced by the finding of Clemmer and Schneider (1996) that customers would be more satisfied when employees were polite and friendly.

Second, satisfaction with service recovery also leads to higher level of trust in the mobile phone providers and willingness on the part of customers to engage in positive word-of-mouth communications. These two elements are crucial in the attraction of new customers and retention of existing customers. Another finding worthy of note is that although satisfaction with service recovery does contribute to customer loyalty or commitment, the impact is not as strong as that on trust and word-of-mouth behavior. This implies that service providers must be prepared to explore other factors that could contribute to higher customer loyalty.

Finally, the lack of support of the “recovery paradox” effect suggests that successful service recovery alone could not bring customer satisfaction to pre-service failure levels. Thus it is imperative for service providers to examine their service

operations to identify potential pitfalls with the objective of providing fail-proof service at the first instant. On the other hand, the fact that the levels of trust, word-of-mouth and customer loyalty are observed to be lower for dissatisfied complainants compared to dissatisfied non-complainants implies that attention must be paid to careful management of service recovery. Failed service recovery would invite greater distrust and negative word-of-mouth from dissatisfied complainants.

A comparison of customers who did not complain shows that of those who were originally satisfied with the service, their levels of trust, word-of-mouth and loyalty were much higher than those who were unhappy with the service but chose not to complain. This is a signal to the service providers that providing satisfactory service is imperative in gaining customer support. Dissatisfied customers who opt to remain silent could be disastrous as behind their silent masks are deep distrust, willingness to pass negative word-of-mouth and dismally low loyalty.

Although the above results have contributed further to our understanding of the relationship between customer satisfaction and the various dimensions of the justice theory as well as the phenomenon of “recovery paradox”, there are certain limitations of our research. This study used a cross sectional design based on retrospective report. Hence, recall bias may influence the results. A longitudinal research approach would be better preferred as it could trace the relationship between the customers and the service providers over time. The extent of trust, word-of-mouth behavior and loyalty would be better determined. Another limitation of this research is the sample used. Although it was expected that an online survey would attract a greater number of younger and better educated respondents, the sample was dominated by students and those aged below 24. Future research should attempt to broaden the sample and thus achieve greater representation of the general population of mobile phone users.

In addition, there are several areas that warrant further investigation. First, it would be beneficial to examine if customers perceive differences in the fairness of various distributive justice rules and which would generate greater effect on trust, word-of-mouth and loyalty. Second, as this research was based on responses from users of mobile phone services, it would be better to investigate if customers of other services would display similar behavior. This is because consumer reactions to service failure and recovery might differ because of the level of involvement in a particular service. For instance, failure in medical service received would be expected to have greater effect on customer satisfaction. Finally, a cross-cultural comparison of customers receiving the same service could be an interesting research avenue for us to explore. For instance, would the phenomenon of the “recovery paradox” be found to exist in one culture and not the other? Similarly, would customers from two different cultures differ significantly in the proportion of complainants and non-complainants? All these and other cultural differences would help service providers who operate across national boundary to be more sensitive and thus adopt culturally acceptable measures in dealing with customer complaints.

## References

- Adams, J.S. (1965), “Inequity in social exchange”, in Berkowitz, L. (Ed.), *Advances in Experimental Social Psychology*, Vol. 2, Academic Press, New York, NY, pp. 267-99.
- Andreassen, T.W. (1999), “What drives customer loyalty with complaint resolution?”, *Journal of Service Research*, Vol. 2, pp. 324-32.
- Andreassen, T.W. (2001), “From disgust to delight: do customers hold a grudge?”, *Journal of Service Research*, Vol. 4, pp. 39-49.
- Berry, L.L. and Parasuraman, A. (1991), *Marketing Services: Competing through Quality*, The Free Press, New York, NY.
- Bies, R.J. and Shapiro, D.L. (1987), “Interactional fairness judgments: the influence of causal accounts”, *Social Justice Research*, Vol. 1, pp. 199-218.
- Bitner, M.J., Blooms, B.H. and Tetreault, M.S. (1990), “The service encounter: diagnosing favorable and unfavorable incidents”, *Journal of Marketing*, Vol. 54, January, pp. 71-84.
- Blodgett, J.G., Hill, D.J. and Tax, S.S. (1997), “The effects of distributive justice, procedural and interactional justice on postcomplaint behavior”, *Journal of Retailing*, Vol. 73 No. 2, pp. 185-210.
- Blodgett, J.G., Wakefield, K.L. and Barnes, J.H. (1995), “The effects of customer service on consumer complaining behavior”, *Journal of Services Marketing*, Vol. 9 No. 4, pp. 31-42.
- Clemmer, E.C. (1988), “The role of fairness in customer satisfaction with services”, doctoral dissertation, Psychology Department, University of Maryland, College Park, MD.
- Clemmer, E.C. (1993), “An investigation into the relationship of fairness and customer satisfaction with service”, in Cropanzano, R. (Ed.), *Justice in the Workplace – Approaching Fairness in Human Resources Management Series in Applied Psychology*, Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 193-207.
- Clemmer, E.C. and Schneider, B. (1996), “Fair service”, *Advances in Services Marketing and Management*, Vol. 5, pp. 109-26.
- Crosby, L.A., Evans, K.R. and Cowles, D. (1990), “Relationship quality in service selling: an interpersonal influence perspective”, *Journal of Marketing*, Vol. 51, April, pp. 11-27.
- Dawkins, P. and Reichheld, F.F. (1990), “Customer retention as a competitive weapon”, *Directors and Bounds*, Vol. 14, Summer, pp. 41-7.
- Dick, A.S. and Basal, K. (1994), “Consumer loyalty: toward an integrated conceptual framework”, *Journal of Academy Marketing Science*, Vol. 22 No. 2, pp. 99-113.
- Dwyer, R.E., Schurr, P.H. and Oh, S. (1987), “Developing buyer-seller relationships”, *Journal of Marketing*, Vol. 51, April, pp. 11-27.
- Etzel, M.J. and Silverman, B.I. (1981), “A managerial perspective on directions for retail customer dissatisfaction research”, *Journal of Retailing*, Vol. 57, Fall, pp. 124-36.
- Fisk, R.P., Brown, S.W. and Bitner, M.J. (1993), “Tracking the evolution of the services marketing literature”, *Journal of Retailing*, Vol. 57, Fall, pp. 124-36.
- Fornell, C. (1992), “A national customer satisfaction barometer: the Swedish experience”, *Journal of Marketing*, Vol. 56, January, pp. 6-21.

- Ganesan, S. (1994), "Determinants of long-term orientation in buyer-seller relationships", *Journal of Marketing*, Vol. 58, April, pp. 1-19.
- Gilliland, S.W. (1993), "The perceived fairness of selection systems: an organizational justice perspective", *Academy of Management Review*, Vol. 18 No. 4, pp. 697-734.
- Goodwin, C. and Ross, I. (1992), "Consumer responses to service failures: influence of procedural and interactional fairness perception", *Journal of Business Research*, Vol. 25 No. 2, pp. 149-63.
- Greenberg, J. (1990), "Organizational justice: yesterday, today and tomorrow", *Journal of Management*, Vol. 16 No. 2, pp. 399-432.
- Grönroos, C. (1988), "Service quality: the six criteria of good perceived service", *Review of Business*, Vol. 9, Winter, pp. 10-30.
- Heskett, J.L., Sasser, W.E. Jr and Schlesinger, L.A. (1997), *The Service Profit Chain: How Leading Companies Link Profit to Loyalty, Satisfaction and Value*, Free Press, New York, NY.
- Hoffman, D.K. and Kelley, S.W. (2000), "Perceived justice needs a recovery evaluation: a contingency approach", *European Journal of Marketing*, Vol. 34 Nos 3/4, pp. 418-29.
- Hoffman, D.K., Kelley, S.W. and Bateson, J.E.G. (1997), *Essentials of Services Marketing*, The Dryden Press, New York, NY.
- Johnston, R. (1995), "Service failure and recovery: impact, attributes and processes", *Advances in Services Marketing and Management: Research and Practice*, Vol. 4, pp. 211-28.
- Kelley, S.W. and Davis, M.A. (1994), "Antecedents to customer expectation for service recovery", *Journal of the Academy of Marketing Science*, Vol. 22 No. 1, pp. 52-61.
- Kelley, S.W., Hoffman, D.K. and Davis, M.A. (1993), "A typology of retail failures and recovery", *Journal of Retailing*, Vol. 69 No. 4, pp. 429-52.
- Laventhal, J., Karuza, J. and Fry, W.R. (1980), "Beyond fairness: a theory of allocation preferences", in Mikula, G. (Ed.), *Justice and Social Interaction*, Springer-Verlag, New York, NY.
- Lundeen, H.K., Harmon, L.C. and McKenna-Harmon, K.M. (1995), "Service recovery in commercial real estate management", *Journal of Property Management*, Vol. 60 No. 3, pp. 30-2.
- McCullough, M.A. and Bharadwaj, S.G. (1992), "The recovery paradox: an examination of consumer satisfaction in relation to disconfirmation, service quality and attribution based theory", in Allen, C.T. et al. (Eds), *Marketing Theory and Applications*, American Marketing Association, Chicago, IL, p. 119.
- McCullough, M.A., Berry, L.L. and Yadav, M.S. (2000), "An empirical investigation of customer satisfaction after service failure and recovery", *Journal of Service Research*, Vol. 3, pp. 121-37.
- Mattila, A.S. (2001), "The effectiveness of service recovery in a multi-industry setting", *Journal of Services Marketing*, Vol. 15 No. 7, pp. 583-96.
- Maxham, J.G. (2001), "Service recovery's influence on consumer satisfaction, positive word-of-mouth and purchase intentions", *Journal of Business Research*, Vol. 54, pp. 11-24.
- Mohr, L.A. and Bitner, M.J. (1995), "The role of employee effort in satisfaction with service transactions", *Journal of Business Research*, Vol. 32 No. 3, pp. 239-52.
- Morgan, R.M. and Hunt, S.D. (1994), "The commitment-trust theory of marketing relationships", *Journal of Marketing*, Vol. 58, July, pp. 20-38.
- Oliver, R.L. and Swan, J.E. (1989), "Consumer perspective of interpersonal equity and satisfaction in transactions: a field survey approach", *Journal of Marketing*, Vol. 53, April, pp. 21-35.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "SERVQUAL: a multiple item scale for measuring consumer perceptions of service quality", *Journal of Retailing*, Vol. 64, Spring, pp. 12-40.
- Reichheld, F.F. and Sasser, E.W. (1990), "Zero defects: quality comes to services", *Harvard Business Review*, Vol. 68, September-October, pp. 105-11.
- Smart, D.T. and Martin, C.L. (1993), "Consumers who correspond with business: a profile and measure of satisfaction with response", *Journal of Applied Business Research*, Vol. 9, Spring, pp. 30-42.
- Smith, A.K. and Bolton, R. (1998), "An experimental investigation of customer reactions to service failure and recovery encounters", *Journal of Service Research*, Vol. 1, pp. 65-81.
- Tax, S.S. and Brown, S.W. (2000), "Service recovery: research insights and practices", in Swartz, T.A. and Iacobucci, D. (Eds), *Handbook of Services Marketing and Management*, Sage Publication, Thousand Oaks, CA, pp. 271-85.
- Tax, S.S., Brown, S.W. and Chandrashekar, M. (1998), "Customer evaluation of service complaint experiences: implications for relationship marketing", *Journal of Marketing*, Vol. 62, April, pp. 60-76.
- Taylor, S. (1994), "Waiting for service: the relationship between delays and evaluations of service", *Journal of Marketing*, Vol. 58, April, pp. 56-69.
- Walker, L. and Harrison, J. (2001), "The measurement of word of mouth communication and an investigation of service quality and customer commitment as potential antecedents", *Journal of Service Research*, Vol. 4, August, pp. 60-75.
- Westbrook, R.A. (1987), "Product/consumption-based affective responses and post-purchase processes", *Journal of Marketing Research*, Vol. 24, pp. 258-70.
- Zeithaml, V.A. and Bitner, M.J. (1996), *Services Marketing*, McGraw-Hill, New York, NY.
- Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1993), "The nature and determinants of customer expectations of services", *Journal of Academy of Marketing Science*, Vol. 21, Winter, pp. 31-46.
- Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996), "The behavioral consequences of service quality", *Journal of Marketing*, Vol. 60, pp. 31-46.
- Zemke, R. (1999), "Service recovery: turning oops into opportunity", in Zemke, R. and Woods, J. (Eds), *Best Practices in Customer Service*, AMA Publications, New York, NY, pp. 279-88.
- Zikmund, W.G. (1999), *Business Research Methods*, The Dryden Press, New York, NY.

### Corresponding author

Ah-Keng Kau can be contacted at bizkauak@nus.edu.sg

## Executive summary and implications for managers and executives

*This summary has been provided to allow managers and executives a rapid appreciation of the content of the article. Those with a particular interest in the topic covered may then read the article in toto to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefit of the material present.*

Customer satisfaction is crucial to the success of any business. A dissatisfied customer relates his or her bad experience with a service provider to, on average, between 10 and 20 other people. Service recovery – the action the service provider takes in response to poor service quality – must therefore be carried out effectively in order to pacify the dissatisfied customer and reduce the damage in the relationship. Kau and Loh examine service recovery in the Singapore mobile telephone industry.

### Customer perceptions of effective service recovery

Customers must perceive the outcomes to be fair or just if they are to be satisfied with the service provider's attempts at service recovery. Their perceptions will center on the service recovery itself, the outcomes connected to the recovery strategy, and the interpersonal behaviors during the recovery process and the delivery of outcomes. "Distributive justice" deals with the decision outcomes and includes, for example, compensation in the form of discounts, coupons, refunds or free gifts, apologies and so on. "Procedural justice" deals with the service provider's decision-making procedures and includes process control, decision control, accessibility, flexibility, and the timing and speed of decisions. "Interactional justice" deals with interpersonal behavior in the enactment of procedures and delivery of outcomes, and covers the explanation offered by the service provider, and the honesty, politeness, effort and empathy shown by staff.

### Types of customer

Some customers complain and others do not. Those who do not complain may be ordinary, satisfied customers, or dissatisfied non-complainants. The complainants may be

either satisfied with the service recovery provided, or dissatisfied. Kau and Loh examine the differences in behavioral outcomes among these four groups of customers.

### The research results

The research reveals that all the dimensions of perceived justice significantly affect complainants' level of satisfaction with the service recovery. Distributive justice makes the strongest contribution, while interactional justice contributes less. Moreover, customers who are satisfied with the service recovery are more likely to trust the firm, less likely to make harmful comments about it to family and friends and, to a lesser extent, are more likely to be loyal and committed to the firm. Satisfied complainants show significantly higher ratings for trust, word of mouth and loyalty than their counterparts who are dissatisfied with the service recovery. Ordinary, satisfied customers are more likely to trust the firm and talk positively about it to family and friends than are the satisfied complainants. Dissatisfied complainants are less likely to trust the firm and more likely to criticise it to family and friends than are dissatisfied non-complainants, but there is no significant difference between dissatisfied complainants and dissatisfied non-complainants in their level of loyalty to the firm.

### The implications for managers

The findings do not support previous researchers who have claimed the existence of a "recovery paradox" – that effective service recovery can make customers more satisfied than if the service had been provided correctly the first time round. Service providers must therefore strive to identify potential service pitfalls and design remedies before any service failure affects customers. Customers are looking for the right outcome from a firm's service recovery efforts, but they also want the service recovery procedures to be properly managed, and they expect skilled employees to handle their complaints.

*(A précis of the article "The effects of service recovery on consumer satisfaction: a comparison between complainants and non-complainants". Supplied by Marketing Consultants for Emerald).*

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.



# The mediating effect of organizational reputation on customer loyalty and service recommendation in the banking industry

Nick Bontis and Lorne D. Booker

*DeGroote School of Business, McMaster University, Hamilton, Canada, and*

Alexander Serenko

*Faculty of Business Administration, Lakehead University,  
Thunder Bay, Canada*

## Abstract

**Purpose** – The overall purpose of this study was to develop an understanding of the mediating effect of organizational reputation on service recommendation and customer loyalty.

**Design/methodology/approach** – Four models were developed that were variations of the American Customer Satisfaction Model (ACSM). These models were then tested by using the Partial Least Squares (PLS) procedure on a data collected from a survey that yielded 8,098 respondents.

**Findings** – It was found that customer satisfaction enhances reputation in the service environment. It was also discovered that reputation partially mediates the relationship between satisfaction and loyalty, and that reputation partially mediates the relationship between satisfaction and recommendation.

**Research limitations/implications** – More research needs to be undertaken to explore the role of reputation within the ACSM. It is necessary to conduct research employing experimental design with longitudinal data captured from across industries using robust measures.

**Originality/value** – The findings suggest that the relationship between corporate reputation and profitability may reside in reputation's influence on customer loyalty, and that reputation plays an important role within the ACSM. This study is one of the first documented attempts to use PLS to test a mediation effect.

**Keywords** Customer satisfaction, Customer loyalty, Banking

**Paper type** Research paper

## Introduction

The third most-often cited construct in the intellectual capital literature is customer capital (Bontis, 1998, 1999). As such, customer capital is hypothesized to be a driving force behind organizational performance (Bontis and Fitz-enz, 2002). The satisfaction of customers is an extremely popular subject in the extant management literature. This is because it is often associated with higher customer loyalty rates and increased economic returns that drive strategic business valuation (Anderson *et al.*, 1994,

The authors wish to extend special thanks to Dr Wynne Chin for allowing the use of a beta version of PLS Graph 3.0.



---

Anderson and Srinivasan, 2003, Gronholdt *et al.*, 2000, Parasuraman and Grewal, 2000, Spiteri and Dion, 2004, Srinivasan *et al.*, 2002). Most previous research projects have investigated new approaches to increase customer satisfaction. However, businesses have begun to realize that satisfied customers are not always profitable. Now, the attention has shifted to understanding of the link between satisfaction and profitability (Bloemer and Kasper, 1995, Zeithaml, 2000). Researchers examine the consequences of satisfaction such as reputation, loyalty and service recommendation (Athanasopoulos *et al.*, 2001, Hallowell, 1996).

The American Customer Satisfaction Model (ACSM) (Fornell *et al.*, 1996) is one of the most widely employed models in satisfaction research. It is a causal model describing several key antecedents and consequences of customer satisfaction. The model and its various adaptations have been utilized in numerous multi-discipline investigations, for example, in information systems (Dow *et al.*, 2006, Turel and Serenko, 2006), banking (Ball *et al.*, 2004, Chakravarty *et al.*, 2004, Hallowell, 1996, Mukherjee *et al.*, 2003), transportation, communications, and retailing (Arnett *et al.*, 2003).

The causal relationship between satisfaction and service recommendation has not been explored in the context of the American Customer Satisfaction Model. The original model proposed a negative link between customer satisfaction and complaining behavior; service/product recommendation was not included. However, service/product recommendation factors have been explored together with customer satisfaction (Brown *et al.*, 2005, Gremler *et al.*, 2001). Some projects report a positive association (Athanasopoulos *et al.*, 2001, Ranaweera and Prabhu, 2003, Wirtz and Chew, 2002, Zeithaml *et al.*, 1996) while others have difficulty finding a connection. Brown *et al.* (2005) conclude that the relationship between the two constructs is more complex than previous studies had indicated and call for further research.

The link between satisfaction and reputation has received minimal attention. It was found that satisfaction leads to reputation (Anderson and Sullivan, 1993) and improves image (Andreassen and Lindestad, 1998). Wang *et al.* (2003) concluded that service quality causes superior reputation in the banking industry in China. Research into corporate reputation has progressed independently of research into satisfaction.

The link between reputation and customer loyalty deserves more attention. Andreassen and Lindestad (1998) argued that corporate image – part of reputation – is an antecedent to customer loyalty. Later, it was concluded that reputation may be loyalty's strongest driver (Andreassen, 1994, Ryan *et al.*, 1999). Andreassen and Lindestad encourage others to investigate the role that image plays, but very little research has been undertaken since.

In addition to that gap, there has been very little research examining reputation as a causal factor in positive recommendation responses. Rogerson (1983) showed that a high reputation increases the likelihood that consumers will provide a recommendation.

The literature within the reputation field suggests that there is a link between corporate reputation and financial performance. The nature of that relationship has not been established. Chun (2005) has argued that the reputation – financial performance link might not be direct but might be related to satisfaction and loyalty, and that satisfaction and loyalty may be either antecedents or consequences of reputation. In addition to this, the effects of corporate reputation have not been previously examined

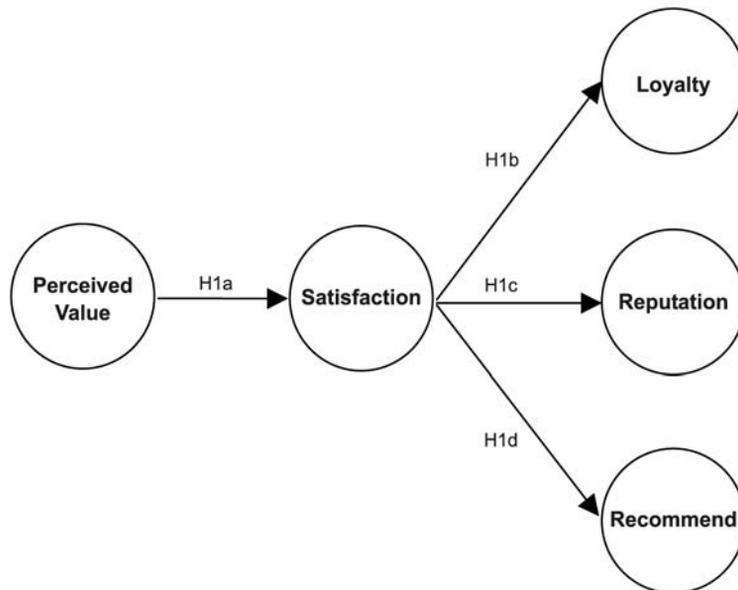
within the nomological network of the ACSM. That leaves some room for further research.

### Theoretical background and model development

In this section, a model of the consequences of customer satisfaction is proposed, and its variations are examined in which the potential mediating effect of reputation on customer loyalty and service recommendation is explored. The model consists of five interrelated latent variables: perceived value, satisfaction, loyalty, reputation, and recommendation.

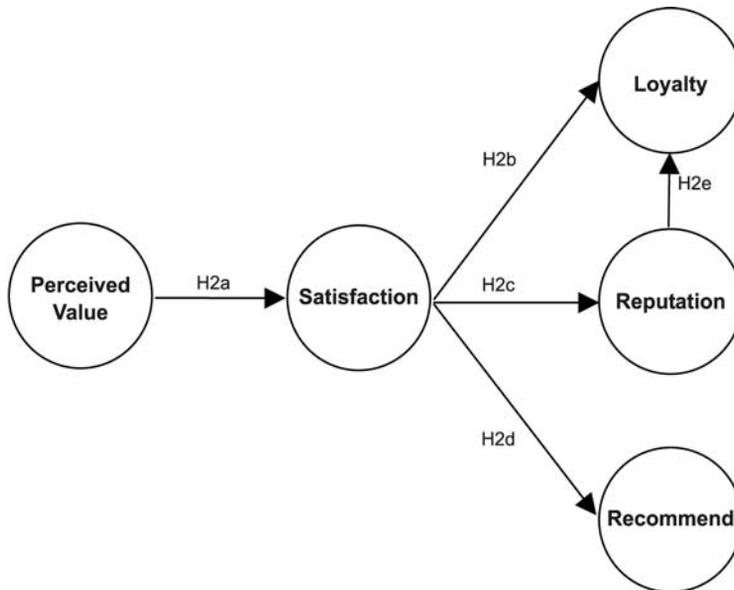
Figure 1 depicts three simple direct outcomes of satisfaction – loyalty, reputation, and recommendation. Figure 2 shows a similar model in which reputation mediates the relationship between satisfaction and loyalty. Figure 3 alters the model so that reputation mediates the relationship between satisfaction and recommendation. Figure 4 shows the model in which reputation mediates the relationship between satisfaction and loyalty, and satisfaction and recommendation.

Perceived value is the customer's overall assessment of the benefits they receive relative to the sacrifice they make (Dodds *et al.*, 1991, Fornell *et al.*, 1996, Slater, 1997, Woodruff, 1997, Zeithaml, 1988). Customer satisfaction is the consumers' overall evaluation based on their overall experience. Although it can be viewed in two ways – transaction-specific outcome or cumulative evaluation (Wang *et al.*, 2004) – the ACSM-based research considers satisfaction a cumulative evaluation.



**Figure 1.**  
Satisfaction without  
indirect effects

- Hypothesis 1(a).* Perceived value has a positive direct effect on satisfaction.
- Hypothesis 1(b).* Satisfaction has a positive direct effect on loyalty.
- Hypothesis 1(c).* Satisfaction has a positive direct effect on reputation.
- Hypothesis 1(d).* Satisfaction is has a positive direct effect on recommendation.



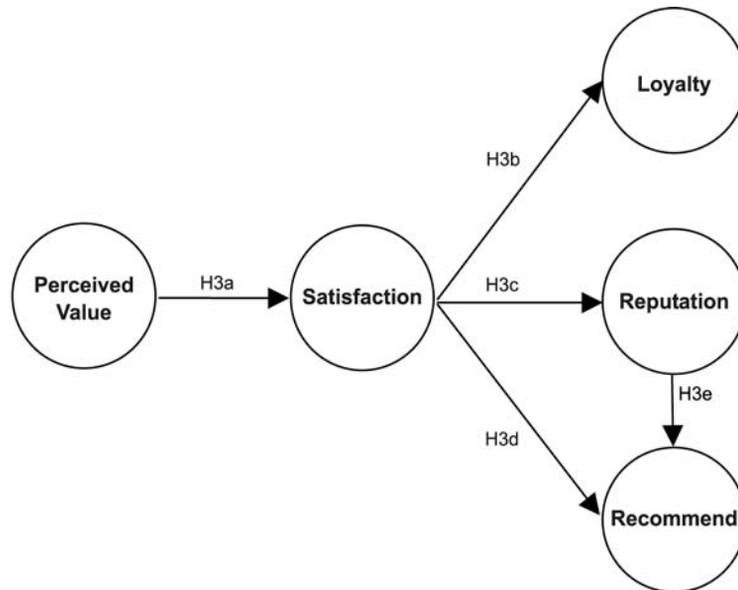
- Hypothesis 2(a).* Perceived value has a positive direct effect on satisfaction.  
*Hypothesis 2(b).* Satisfaction has a positive direct effect on loyalty.  
*Hypothesis 2(c).* Satisfaction has a positive direct effect on reputation.  
*Hypothesis 2(d).* Satisfaction has a positive direct effect on recommendation.  
*Hypothesis 2(e).* Reputation has a positive direct effect on loyalty.

**Figure 2.**  
Reputation mediating  
loyalty

In the literature, loyalty has been defined as an attitude and as a behavior (Ball *et al.*, 2004). The attitudinal perspective positions loyalty as a desire to continue a relationship with the company. The problem is that intentions are an imperfect representation of behavior (Mittal and Kamakura, 2001) since they do not always lead to actions. The behavioral perspective describes loyalty as repeat patronage (Reibstein, 2002) but does not reveal the motive that inspires it. The behavior could be spurious (Dick and Basu, 1994), based on habit, third person influence, convenience or even random chance (Oliver, 1999). This project defines loyalty from an attitudinal perspective; it measures loyalty as the likelihood of switching in the absence of switching costs. Furthermore, direct relationships between satisfaction and loyalty, between reputation and loyalty, and a mediating relationship between satisfaction, reputation and loyalty are proposed.

The link between satisfaction and loyalty is well established, but the one between reputation and loyalty is under-explored. For example, Andreassen (1994) modeled a relationship between reputation and loyalty and concluded that reputation may be the strongest driver of loyalty in the public sector, but this issue has not been investigated further. The European Customer Satisfaction Index draws a relationship between image and loyalty. Many accounts of reputation use the terms image and reputation interchangeably.

Currently, there are a variety of definitions of corporate reputation (Berens and Van Riel, 2004, Chun, 2005, Gotsi and Wilson, 2001); each academic discipline offers its own



**Figure 3.**  
Reputation mediating  
recommendation

*Hypothesis 3(a).* Perceived value has a positive direct effect on satisfaction.

*Hypothesis 3(b).* Satisfaction has a positive direct effect on loyalty.

*Hypothesis 3(c).* Satisfaction has a positive direct effect on reputation.

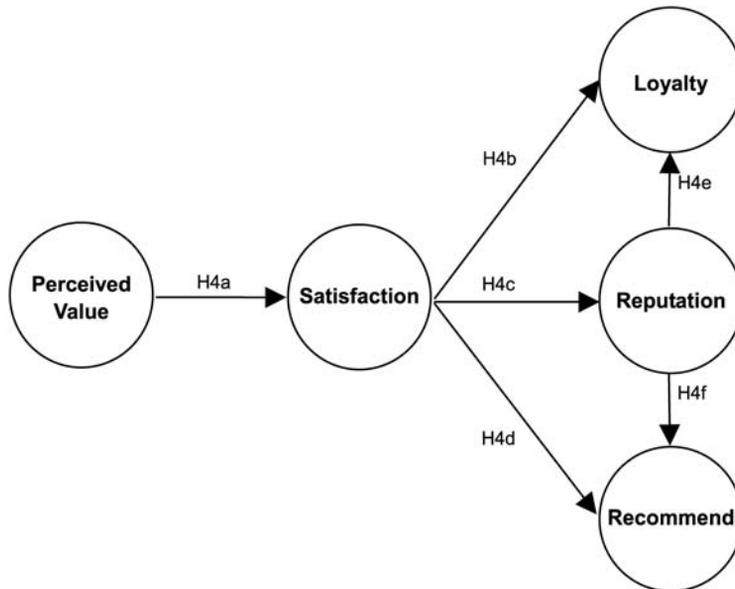
*Hypothesis 3(d).* Satisfaction has a positive direct effect on recommendation.

*Hypothesis 3(e).* Reputation has a positive direct effect on recommendation.

perspective (Chun, 2005). Some scholars have explored reputation from a multi-stakeholder perspective – a corporation does not have a single reputation, it has many. No single definition of corporate reputation has been accepted as a uniform definition. The most effective ones describe corporate reputation as a global valuation.

There are as many ways of measuring reputation as there are academic disciplines studying it. There are various ranking, rating, and scale-based measures. Ranking measures, employed by *Fortune* or the *Financial Times*, provide ordered company listings. They indicate which company is better but not how much better it is. Rating measures ask respondents to rate the reputation of the company. They do not enable researchers to compare the reputation of firms within industries or between industries. However, they are effective at capturing situation-specific measures of the perceptions of the target stakeholders a disaggregated level of analysis.

Scale measures, such as Fombrun's reputation quotient, may be used to capture multiple dimensions of the reputation construct, e.g. innovation and management quality in various stakeholder groups. Rankings and scales have a common problem; they provide an aggregated measure of reputation. The problem is that corporations do not have one reputation; they have many (Caruana, 1997). Therefore, aggregate measures such as rankings and scales can result in an ecological fallacy if they are used at disaggregated levels of analysis. The literature has not reached a consensus on how best to measure reputation. For an excellent overview of efforts to define and measure reputation see Gotsi and Wilson (2001) and Chun (2005).



- Hypothesis 4(a).* Perceived value has a positive direct effect on satisfaction.
- Hypothesis 4(b).* Satisfaction has a positive direct effect on loyalty.
- Hypothesis 4(c).* Satisfaction has a positive direct effect on reputation.
- Hypothesis 4(d).* Satisfaction has a positive direct effect on recommendation.
- Hypothesis 4(e).* Reputation has a positive direct effect on loyalty.
- Hypothesis 4(f).* Reputation has a positive direct effect on recommendation.

**Figure 4.**  
Reputation mediating  
loyalty and  
recommendation

The present project measures reputation by asking customers to rate the organization's reputation in comparison to those of its competitors on a five-point Likert-type scale ranging from best in the industry to worst in the industry. This method provides several benefits. First, it captures the reputation with the stakeholders of interest to this study – the consumers of banking services. Second, it does not presume to understand the dimensions of reputation that are important to the consumer. Asking customers to rate the bank's reputation allows the consumer to determine which elements of reputation are important to them. Next, this method has the advantage of providing comparative information. It is not enough to know that a bank's clients would rate its reputation as above average if it is not known how they would rate its competitors. Therefore, the measure chosen for this project provides a comparative rating.

Service recommendation, also referred to as advocacy and word-of-mouth (WOM) in the customer service literature, can be either positive or negative. This project focuses on positive WOM – the inclination of the consumer to say nice things about the firm. Satisfied customers are more likely to engage in positive WOM (Anderson *et al.*, 1994; Athanassopoulos *et al.*, 2001). Brown *et al.* (2005) argue that the antecedents of WOM are not fully understood and conclude that the satisfaction – WOM link is more complex than previous research suggested. This project defines recommendation as the consumer's likelihood of recommending the institution if asked to make a recommendation by a friend.

---

Based on the discussion above, four research questions and related hypotheses are proposed.

*RQ1.* What are the possible causal relationships among the following constructs: perceived value, satisfaction, loyalty, reputation, and recommendation (i.e. what causal models can be formed out of these constructs based on the extant literature)?

---

To answer this research question, a review of related literature in the field of marketing, general management, intellectual capital, and corporate reputation was conducted. Based on the preliminary findings in the related academic works, four possible nomological networks (i.e. models) may be constructed. Figures 1 to 4 present these models.

*RQ2.* In terms of each individual suggested model, do the proposed relationships hold true?

*RQ3.* In terms of a mediating effect of the reputation construct, does it fully or partially mediate the satisfaction – loyalty relationship?

*RQ4.* In terms of a mediating effect of the reputation construct, does it fully or partially mediate the satisfaction – recommendation relationship?

## **Methodology**

### *Data collection and research instrument*

The data for this study were collected from a major North American bank (referred to as “ABC Bank”) in 2003 as part of its routine customer satisfaction survey. The survey was conducted by ABC representatives over the phone. The list of potential respondents was randomly generated from the entire client base with no discrimination requirements. The research instrument was created by International Survey Research LLC (ISR) in collaboration with ABC. This research instrument is copyrighted. Therefore, as the intellectual property of ISR, it may not be presented in this project as per a non-disclosure agreement.

The scale items can be described however. Perceived value was measured by asking customers to assess the bank’s products and services considering bank fees on a ten-point scale. Satisfaction was measured by a question relating to the overall customer experience with the bank for the past three months on a ten-point scale. Loyalty was captured by asking respondents about their probability – on a ten-point scale – of switching to a comparable service if no effort or expenses were involved. The three items presented above were very similar or adapted from Fornell *et al.* (1996). Reputation was measured by a question on a five-point scale pertaining to the overall evaluation of the bank’s reputation compared with those of similar financial institutions in North America over the past three months. Recommendation was measured by a ten-point scale item about the customer’s likelihood of recommending ABC to a colleague, friend, or a business acquaintance.

The measures above employ one-item constructs. The value of single-item constructs has been debated. On the one hand, the use of multiple indicators for each construct is desirable since this allows measuring the psychometric properties of constructs under investigation. On the other, there is evidence to suggest that

---

single-item constructs are as good at capturing the nature of the phenomenon in question as several-item instruments (Gardner and Cummings, 1998, Patrician, 2004, Wanous *et al.*, 1997). Also, additional items may provide little incremental value while reducing the quality of respondent responses (Drolet and Morrison, 2001). Moreover, in terms of the present study, the items that measure perceived value, satisfaction and loyalty were adapted from Fornell *et al.* (1996) who initially presented these indicators as part of multi-item constructs. However, all subsequent projects report on high reliability and validity measures of these items; for instance, some researchers report Cronbach's Alpha of above 0.9. Therefore, in the practice-oriented survey conducted by a professional company specializing in survey research, one-item constructs were believed to be more relevant.

### Data analysis procedures

Partial Least Squares (PLS) (Chin, 1998a, b, 2001) was employed to estimate the models (Figures 1-4). PLS is a second generation structural equation modeling (SEM) technique developed by Wold (1982). It works well with structural equation models that contain latent variables and a series of cause-and-effect relationships (Gustafsson and Johnson, 2004). PLS has three major advantages over other SEM techniques that make it well suited to this project. First, in PLS, constructs may be measured by a single item whereas in covariance-based approaches, at least four questions per construct are required. Second, in most marketing studies, data tend to be distributed non-normally (it is noted that mostly ten-item scales were employed to reduce a negative impact of non-normality), and PLS does not require any normality assumptions and handles non-normal distributions relatively well. Third, PLS accounts for measurement error and should provide more accurate estimates of interaction effects such as mediation (Chin, 1998a).

PLS poses challenges and opportunities for the study of mediation effects. On the one hand, it is particularly well suited to the study of mediation. Mediation effects are the product of two relationships; between the independent variable and the mediator, and between the mediator and the dependent variable. The product of two normally distributed variables is always skewed (Bollen and Stine, 1990, Lockwood and Mackinnon, 1998), but PLS does not rely on normality assumptions. PLS employs bootstrapping to test the significance of relationships so it work well with non-normal data (Efron, 1988). Therefore, PLS may perform well in testing mediation effects. On the other hand, there appears to be no official guidelines providing instructions on how to use PLS to study mediation.

There are, however, general recommendations for testing mediation that can be categorized into three general approaches (Mackinnon *et al.*, 2002). The first method, described as the causal steps approach, is based on the works of Judd and Kenny (1981) and Baron and Kenny (1986). A search on the ISI Web of Science citation database indicates that Baron and Kenny's paper has been cited over 8,120 times that adds credibility to this method. The second approach, described as the difference in coefficients method, examines regression coefficients before and after the mediating variable is included. The third technique is outlined as the product of coefficients involving paths in a path model approach. The first approach uses regression analysis. The last two approaches employ the goodness-of-fit indices provided by

---

covariance-based SEM. SEM is the method preferred for mediation analysis (Frazier *et al.*, 2004).

PLS is best used with the casual steps approach that relies on regression analysis. The path coefficients generated by PLS provide an indication of relationships and can be used similarly to the traditional regression coefficients (Gefen *et al.*, 2000). First, a direct link must be established between the independent and dependent variable to ensure there is a relationship to be mediated. Second, a direct relationship must be established between the independent and mediator variable. Third, the mediator must be shown to be related to the dependent variable. Last, the relationship between the independent and dependent variables must be significantly reduced when the mediator is added. The relationships between the independent and dependent variables as well as the independent and mediating variables should be theoretically based and supported by the literature. These four steps will be emulated in this study using PLS.

The assessment of the significance of the reduction of the relationship between the independent and dependent variables cannot be assessed by a visual inspection of the coefficients. It has to be assessed mathematically. The Sobel test has been a traditional method of testing the significance of mediation effects. Newer methods that are similar to the Sobel test have been shown to have higher power than the Sobel test (Mackinnon *et al.*, 2002). For large sample sizes – like the one used in this study – all tests generate similar results. The Sobel test is used in this study because it is the most widely employed. The significance is measured by the following formula:

$$z\text{-value} = a * b / \text{SQRT}(b^2 * s_a + a^2 * s_b^2).$$

This formula requires the unstandardized regression coefficient ( $a$ ) and the standard error ( $s_a$ ) of the relationship between the independent variable  $a$ , and the unstandardized regression coefficient ( $b$ ) and standard error ( $s_b$ ) of the path from the mediator to the dependent variable.

## Results

### *Descriptive statistics*

The survey instrument was administered in Canada on behalf of a major bank by International Survey Research LLC who surveyed 8,098 respondents. Out of them, 55 per cent were female, the average age was 44 years old, and 25 per cent of the respondents (2,057) used internet banking. Based on the overall customer data of ABC, it was concluded that this was a fully representative sample.

### *Construct statistics*

Perceived value, satisfaction, loyalty and recommendation were captured using a ten-point Likert-type scale. Reputation was measured on a five-point scale. Loyalty was captured using a negatively-worded scale (the measure was converted). Table I provides descriptive statistics for the constructs.

### *Model analysis*

Bootstrapping was used to evaluate the significance of the path coefficients and estimate the standard error. Bootstrapping is not a standardized procedure. A situation-specific decision must be made regarding the number of bootstrap retrials to undertake (Rasmussen, 1988). An inadequate number of retrials may result in incorrect

estimates of standard error, confidence intervals, t-values, or conclusions in hypothesis tests.

Useful guidelines for the selection of the number of retrials are being explored in the literature (Andrews and Buchinsky, 2000, 2001, 2002). For this study, the software would not perform more than 3,783 retrials on the fourth model. Even at that level, there is still some variability in the output of the bootstrapping process. Table II shows the estimate of standard error, and Table III demonstrates t-statistics from five separate runs of the PLS bootstrap procedure on model four with 3,783 retrials. Given some inconsistencies, average values were used in further calculations.

*Model one analysis*

The first model presents direct paths from satisfaction to the three dependent variables (see Figure 5). All links were significant at the 0.000 level. No indirect effects were hypothesized or tested. Refer to Table IV for detail.

*Model two analysis*

The second model shows reputation playing a mediation role between satisfaction and loyalty (see Figure 6 and Table IV). Four distinct models that emulate the Baron and Kenny four-step method were made to test mediation relationships. Each model had:

Item	N	Min	Max	Mean	Std dev
Perceived value	7,536	1	10	7.549	1.8616
Satisfaction	8,059	1	10	7.753	1.8561
Loyalty (negative)	7,880	1	10	6.254	2.9595
Reputation	7,679	1	5	3.750	0.8420
Recommendation	7,962	1	10	7.753	2.3991

**Table I.**  
Descriptive statistics of variables

Path	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
Pv-Sat	0.0111	0.0112	0.0112	0.0113	0.0112
Sat-Loy	0.0128	0.0125	0.0127	0.0127	0.0128
Sat-Rep	0.0107	0.0110	0.0109	0.0109	0.0108
Sat-Rec	0.0115	0.0115	0.0115	0.0112	0.0113
Rep-Loy	0.0127	0.0128	0.0128	0.0126	0.0127
Rep-Rec	0.0111	0.0109	0.0110	0.0108	0.0108

**Table II.**  
Variability of estimates of standard error generated by PLS Graph's Bootstrap Procedure at 3,783 retrials

Path	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
Pv-Sat	56.7928	56.3791	56.3448	55.8821	56.0136
Sat-Loy	27.8889	28.6360	28.0343	28.2076	27.8413
Sat-Rep	46.7258	45.6813	46.0191	45.8028	46.4012
Sat-Rec	46.3382	46.6799	46.5674	47.6089	47.3771
Rep-Loy	18.9674	18.7257	18.6870	19.0539	18.9082
Rep-Rec	28.6235	28.9829	28.7780	29.3270	29.2905

**Table III.**  
Variability of t-values and standard deviation produced by PLS Graph's Bootstrap Procedure at 3,783 retrials

- (1) a direct path from satisfaction to loyalty;
- (2) a direct path from satisfaction to reputation;
- (3) a direct path from reputation to loyalty; and
- (4) a direct path from satisfaction to loyalty, and an indirect path from satisfaction to reputation then from reputation to loyalty.

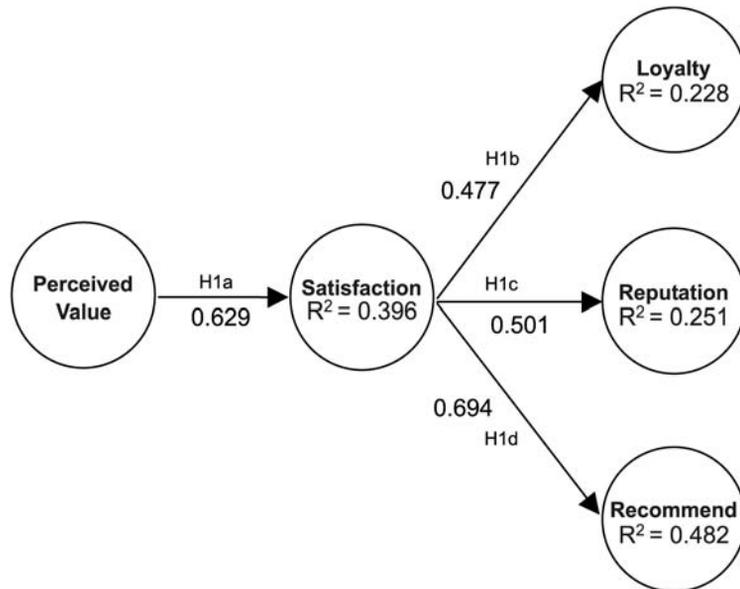
Each model included a direct path from perceived value to satisfaction.

Mediation exists if the coefficient of the direct path between the independent variable and the dependent variable is reduced when the indirect path via the mediator is introduced into the model. The direct path is measured without the mediator in step 1 above, and with the mediator in step 4 above. The standardized beta of the direct path was 0.477 in step 1 and 0.357 after the reputation was introduced as a mediator. The amount of the relationship between satisfaction and loyalty accounted for by the mediator was 0.120 that represents 25.15 per cent of the direct effect.

The significance of the mediation effect was assessed using the Sobel test. PLS provided the standardized regression coefficients, and unstandardized coefficients were calculated by multiplying the standardized coefficient by the standard deviation of the dependent variable and dividing it by the standard deviation of the independent variable (see Table V). The z-value for the indirect path in step 4 above was 19.83,  $p < 0.000$ .

*Model three analysis*

The third model shows reputation playing a mediation role between satisfaction and recommendation (see Figure 7, Table VI and Table IV). The standardized Beta between satisfaction and recommendation was 0.694 when the link was direct and 0.535 when



**Figure 5.**  
Model 1 direct effects –  
Betas for the paths and R<sup>2</sup>  
for the variables

	Beta	t-value*
<i>Model 1</i>		
H1a. Perceived value – satisfaction	0.629	54.3624
H1b. Satisfaction – loyalty	0.477	45.0746
H1c. Satisfaction – reputation	0.501	46.4607
H1d. Satisfaction – recommendation	0.694	78.5316
<i>Model 2</i>		
H2a. Perceived value – satisfaction	0.629	56.9522
H2b. Satisfaction – loyalty	0.357	27.8419
H2c. Satisfaction – reputation	0.501	46.3028
H2d. Satisfaction – recommendation	0.694	78.1016
H2e. Reputation – loyalty	0.240	18.8037
<i>Model 3</i>		
H3a. Perceived value – satisfaction	0.629	56.1118
H3b. Satisfaction – loyalty	0.477	43.2094
H3c. Satisfaction – reputation	0.501	47.2248
H3d. Satisfaction – recommendation	0.535	46.5060
H3e. Reputation – recommendation	0.317	29.2456
<i>Model 4</i>		
H4a. Perceived value – satisfaction	0.629	56.7928
H4b. Satisfaction – loyalty	0.357	27.8889
H4c. Satisfaction – reputation	0.501	46.7258
H4d. Satisfaction – recommendation	0.535	46.6799
H4e. Reputation – loyalty	0.240	18.9674
H4f. Reputation – recommendation	0.557	28.9829

Notes: \* All t-values are significant at the 0.000 level

Table IV. Hypothesis table with t-statistics

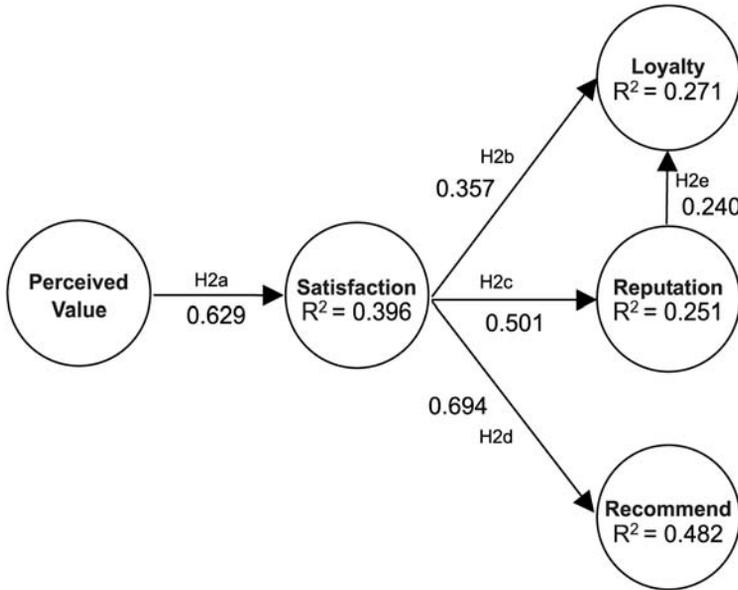


Figure 6. Model 2 Betas for the paths and  $R^2$  for the variables

reputation was included as a mediator, a difference of 23 per cent. The  $z$ -value provided by the Sobel test was 19.2,  $p < 0.000$ .

*Model four analysis*

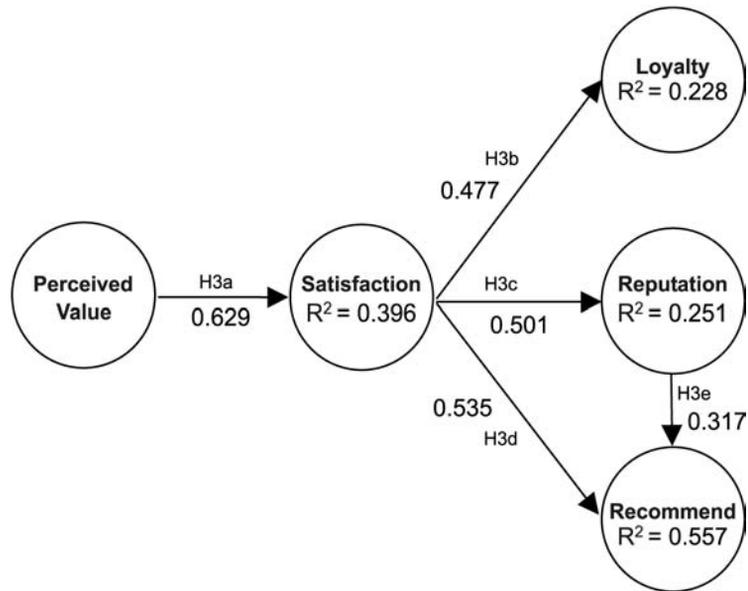
The fourth model shows reputation playing a mediation role between satisfaction and recommendation, and between satisfaction and recommendation. It incorporates the mediation relationships examined in both model 2 and 3 (see Figure 8, Tables VII and IV).

The standardized link between satisfaction and loyalty was 0.477 when the link was direct and 0.357 when reputation was included as a mediator, a difference of 0.120. The indirect path of satisfaction to reputation and from reputation to loyalty was  $0.501 * 0.240 = 0.120$ . The  $z$ -value provided by the Sobel test was 21.76,  $p < 0.000$ .

The standardized link between satisfaction and recommendation was 0.694 when the link is direct and 0.535 when reputation is included as a mediator, a difference of 23 per cent. The indirect path from satisfaction to reputation and from reputation to recommendation to

Step	Path	Standardized Beta	Standard deviation of "Y"	Standard deviation of "X"	Unstandardized Beta	Stand. error
1	Satisfaction – loyalty	0.477	2.960	1.856	0.761	0.0109
2	Satisfaction – reputation	0.501	0.842	1.856	0.277	0.0106
3	Reputation – loyalty	0.419	2.960	0.842	1.473	0.0111
4	Satisfaction – loyalty	0.357	2.960	1.856	0.569	0.0121
4	Satisfaction – reputation	0.501	0.842	1.856	0.227	0.0108
4	Reputation – loyalty	0.240	2.960	0.842	0.844	0.0130

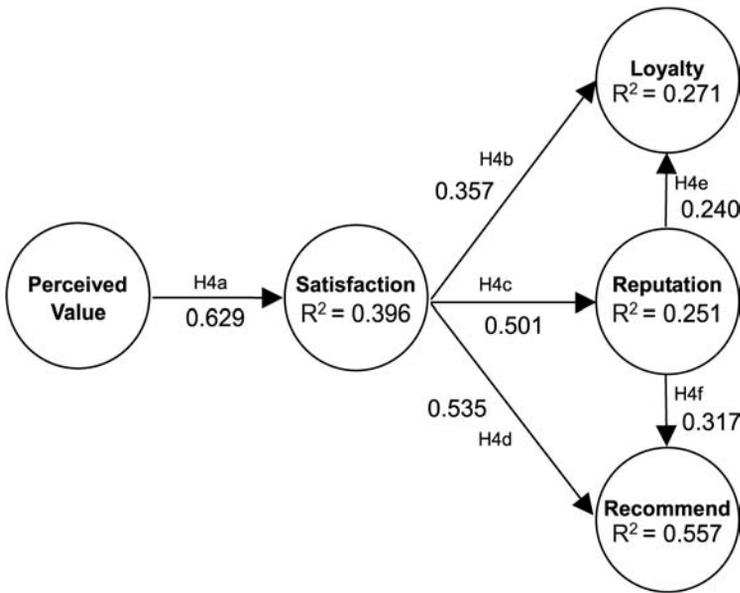
**Table V.**  
Model 2 test of mediation



**Figure 7.**  
Model 3 Betas for the paths and R<sup>2</sup> for the variables

**Table VI.**  
Model 3: test of mediation

Step	Path	Standardized Beta	Standard deviation of "Y"	Standard deviation of "X"	Unstandardized Beta	Stand. error
1	Satisfaction – recommend	0.694	2.399	1.856	0.897	0.0080
2	Satisfaction – reputation	0.501	0.842	1.856	0.227	0.0115
3	Reputation – recommend	0.585	2.399	0.842	1.667	0.0106
4	Satisfaction – recommend	0.535	2.399	1.856	0.692	0.0107
4	Satisfaction – reputation	0.501	0.842	1.856	0.227	0.0097
4	Reputation – recommend	0.317	2.399	0.842	0.903	0.0109



**Figure 8.**  
Model 4 Betas for the paths and R<sup>2</sup> for the variables

Step	Path	Standardized Beta	Standard deviation of "Y"	Standard deviation of "X"	Unstandardized Beta	Stand. error
1	Satisfaction – loyalty	0.477	2.960	1.856	-0.761	0.0103
1	Satisfaction – recommend	0.694	2.399	1.856	0.897	0.0084
1	Satisfaction – reputation	0.501	0.842	1.856	0.227	0.0101
3	Reputation – loyalty	0.419	2.960	0.842	-1.473	0.0111
3	Reputation – recommend	0.585	2.399	0.842	1.667	0.0100
4	Satisfaction – loyalty	0.357	0.296	1.856	0.569	0.0128
4	Satisfaction – reputation	0.501	0.842	1.856	0.227	0.0115
4	Satisfaction – recommend	0.535	2.399	1.856	0.692	0.0113
4	Reputation – loyalty	0.240	2.960	0.842	0.844	0.0139
4	Reputation – recommend	0.317	2.399	0.842	0.903	0.0105

**Table VII.**  
Model 3: test of mediation

---

recommendation was  $0.501 * 0.317 = 0.159$ . The  $z$ -value provided by the Sobel test was 22.3,  $p < 0.000$ . This shows partial mediation in both cases.

All of the hypotheses proposed earlier were supported.

### Discussion and conclusion

The overall purpose of this study was to develop an understanding of the mediating effect of organizational reputation on service recommendation and customer loyalty in the banking industry. Recall that the research questions asked what causal models can be formed out of the constructs based on the literature, and whether the proposed relationships hold true for each model. For this, four adapted versions of the American Customer Satisfaction Model were proposed and tested using the results of a customer satisfaction survey administered by a major North American bank.

The purpose of the first research question was to construct possible causal relationships among the following constructs: perceived value, satisfaction, loyalty, reputation, and recommendation. For this, a review of related works in the field of marketing, satisfaction, and corporate reputation was conducted. Based on the preliminary findings in the related academic studies, four possible nomological networks (i.e. models) may be constructed (Figures 1-4). In each model, perceived value had a positive direct effect on customer satisfaction. In the first model, direct relationships between satisfaction and loyalty, reputation, and recommendation were presented. In the second, a mediating relationship was proposed between satisfaction and loyalty with reputation acting as the mediator. In the third, reputation was proposed as a mediator between satisfaction and recommendation. In the fourth model, reputation was proposed as a mediator between both satisfaction and loyalty, and between satisfaction and recommendation. Based on theory, it was difficult to justify the superiority of any model; therefore, empirical tests were conducted.

The objective of the second research question was to subject the proposed models to empirical testing to verify whether the proposed relationships hold true. For this, the PLS data analysis technique was employed. There are six points that deserve attention.

First, the widely accepted relationship between perceived value and satisfaction is confirmed. The beta for the relationship was 0.629 for each model.

Second, the widely accepted theory that there is a link between satisfaction and loyalty was supported. This study found a moderate relationship between satisfaction and loyalty. The beta of the direct path between satisfaction and loyalty was 0.477.

Third, the relationship between customer satisfaction and corporate reputation is significant with the beta of 0.501. Anderson and Sullivan's (1993) finding that higher satisfaction leads to higher reputation is supported. Consistent with this finding, Wang *et al.* (2003) concluded that service quality leads to superior reputation in the banking industry in China. This project finds evidence that their conclusion applies to North America as well.

Fourth, strong empirical support for the relationship between satisfaction and recommendation was found. The beta of the direct path was 0.694 that supports previous studies (Athanasopoulos *et al.*, 2001; Ranaweera and Prabhu, 2003; Wirtz and Chew, 2002; Zeithaml *et al.*, 1996). Fifth, both Andreassen's (1994) and Ryan *et al.*'s (1999) findings that reputation is a strong driver of loyalty were confirmed. The reputation – loyalty direct link was 0.419. However, within the models tested, reputation was portrayed as part of an indirect effect. Therefore, within the suggested

nomological network the beta of that link was 0.240. Sixth, the understudied relationship between reputation and recommendation was found to be significant (beta = 0.557). That lends weight to Rogerson' (1983) conclusion that maintaining a high reputation increases the likelihood that consumers will provide a recommendation.

The objective of the third research question was to empirically examine a proposed mediation relationship between satisfaction and loyalty. The amount of the relationship between satisfaction and loyalty accounted for by the mediator was  $(0.477 - 0.357) = 0.120$ , which represents 25.15 per cent of the direct effect. Therefore, it is concluded that reputation partially mediates the relationship between satisfaction and loyalty.

The goal of the fourth research question was to test the mediation relationship between satisfaction and recommendation through reputation. The amount of the relationship accounted for by reputation was  $(0.694 - 0.535) = 0.159$ , and the product for the betas of the indirect path was 0.159 that represents 29.7 per cent of the relationship between satisfaction and recommendation.

Based on these findings, it is concluded that reputation serves as a partial mediator of two links: customer satisfaction and loyalty, and satisfaction and recommendation in the banking industry.

Prior research of corporate reputation and customer satisfaction progressed independently of each other. This project has placed reputation within the framework of the ACSM that furthers our understanding of the outcomes of satisfaction. This study appears to be one of the first projects to use PLS to analyze a mediation relationship.

The findings suggest that corporate reputation among customers can be improved by focusing on customer satisfaction. Customer loyalty and the likelihood of customer recommendation can be enhanced by increasing reputation. Consequently, reputation should serve to enhance corporate profitability. This project reinforces the belief that reputation has an important role to play in the banking service environment. It puts forward one possible causal explanation of the elusive link between reputation and profitability.

## References

- Anderson, E.W. and Sullivan, M.W. (1993), "The antecedents and consequences of customer satisfaction for firms", *Marketing Science*, Vol. 12 No. 2, pp. 125-43.
- Anderson, E.W., Fornell, C. and Lehmann, D.R. (1994), "Customer satisfaction, market share, and profitability – findings from Sweden", *Journal of Marketing*, Vol. 58 No. 3, pp. 53-66.
- Anderson, R.E. and Srinivasan, S.S. (2003), "E-satisfaction and e-loyalty: a contingency framework", *Psychology & Marketing*, Vol. 20 No. 2, pp. 123-38.
- Andreassen, T.W. (1994), "Satisfaction, loyalty and reputation as indicators of customer orientation in the public sector", *International Journal of Public Sector Management*, Vol. 7 No. 2, pp. 16-34.
- Andreassen, T.W. and Lindestad, B. (1998), "The effect of corporate image in the formation of customer loyalty", *Journal of Service Research*, Vol. 1 No. 1, pp. 82-92.
- Andrews, D.W.K. and Buchinsky, M. (2000), "A three-step method for choosing the number of bootstrap repetitions", *Econometrica*, Vol. 68 No. 1, pp. 23-51.

- Andrews, D.W.K. and Buchinsky, M. (2001), "Evaluation of a three-step method for choosing the number of bootstrap repetitions", *Journal of Econometrics*, Vol. 103 Nos 1-2, pp. 345-86.
- Andrews, D.W.K. and Buchinsky, M. (2002), "On the number of bootstrap repetitions for BCa confidence intervals", *Econometric Theory*, Vol. 18 No. 4, pp. 962-84.
- Arnett, D.B., Laverie, D.A. and Meiers, A. (2003), "Developing parsimonious retailer equity indexes using partial least squares analysis: a method and applications", *Journal of Retailing*, Vol. 79 No. 3, pp. 161-70.
- Athanassopoulos, A., Gounaris, S. and Stathakopolous, V. (2001), "Behavioural responses to customer satisfaction: an empirical study", *European Journal of Marketing*, Vol. 35 Nos 5/6, pp. 687-707.
- Ball, D., Coelho, P.S. and Machas, A. (2004), "The role of communication and trust in explaining customer loyalty: an extension to the ECSI model", *European Journal of Marketing*, Vol. 38 Nos 9/10, pp. 1272-93.
- Baron, R.M. and Kenny, D.A. (1986), "The moderator mediator variable distinction in social psychological-research – conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 6, pp. 1173-82.
- Berens, G. and Van Riel, B.M. (2004), "Corporate associations in the academic literature: three main streams of thought in the reputation measurement literature", *Corporate Reputation Review*, Vol. 7 No. 2, pp. 161-78.
- Bloemer, J.M. and Kasper, H.D.P. (1995), "The complex relationship between consumer satisfaction and brand loyalty", *Journal of Economic Psychology*, Vol. 16 No. 2, pp. 311-29.
- Bollen, K.A. and Stine, R. (1990), "Direct and indirect effects: classical and bootstrap estimates of variability", *Sociological Methodology*, Vol. 20, pp. 115-40.
- Bontis, N. (1998), "Intellectual capital: an exploratory study that develops measures and models", *Management Decision*, Vol. 36 No. 2, pp. 63-76.
- Bontis, N. (1999), "Managing organizational knowledge by diagnosing intellectual capital: framing and advancing the state of the field", *International Journal of Technology Management*, Vol. 18 Nos 5/6/7/8, pp. 433-62.
- Bontis, N. and Fitz-enz, J. (2002), "Intellectual capital ROI: s causal map of human capital antecedents and consequents", *Journal of Intellectual Capital*, Vol. 3 No. 3, pp. 223-47.
- Brown, T.J., Barry, T.E., Dacin, P.A. and Gunst, R.F. (2005), "Spreading the word: investigating antecedents of consumers' positive word-of-mouth intentions and behaviors in a retailing context", *Journal of the Academy of Marketing Science*, Vol. 33 No. 2, pp. 123-38.
- Caruana, A. (1997), "Corporate reputation: concept and measurement", *Journal of Product & Brand Management*, Vol. 6 No. 2, pp. 109-18.
- Chakravarty, S., Feinberg, R. and Rhee, E.-Y. (2004), "Relationships and Individuals' bank switching behavior", *Journal of Economic Psychology*, Vol. 25, pp. 507-27.
- Chin, W.W. (1998a), "Issues and opinion on structural equation modeling", *MIS Quarterly*, Vol. 22 No. 1, pp. VII-XVI.
- Chin, W.W. (1998b), "The Partial Least Squares approach for Structural Equation Modeling", in Marcoulides, G.A. (Ed.), *Modern Methods for Business Research*, Lawrence Erlbaum Associates, Mahwah, NJ.
- Chin, W.W. (2001), *PLS-Graph User's Guide Version 3.0*, Soft Modeling Inc.
- Chun, R. (2005), "Corporate reputation: meaning and measurement", *International Journal of Management Reviews*, Vol. 7 No. 2, pp. 91-109.

- 
- Dick, A.S. and Basu, K. (1994), "Customer loyalty: towards an integrated conceptual framework", *Journal of the Academy of Marketing Science*, Vol. 22 No. 2, pp. 5-16.
- Dodds, W.B., Monroe, K.B. and Grewal, D. (1991), "Effects of price, brand, and store information on buyers product evaluations", *Journal of Marketing Research*, Vol. 28 No. 3, pp. 307-19.
- Dow, K., Serenko, A., Turel, O. and Wong, J. (2006), "Antecedents and consequences of user satisfaction with e-mail systems", *International Journal of e-Collaboration*, Vol. 2 No. 2, pp. 46-64.
- Drolet, A.L. and Morrison, D.G. (2001), "Do we really need multiple-item measures in service research", *Journal of Service Research*, Vol. 3 No. 3, pp. 196-204.
- Efron, B. (1988), "Bootstrap confidence-intervals – good or bad", *Psychological Bulletin*, Vol. 104 No. 2, pp. 293-6.
- Fornell, C., Johnson, M.D., Anderson, E.W., Cha, J.S. and Bryant, B.E. (1996), "The American customer satisfaction index: nature, purpose, and findings", *Journal of Marketing*, Vol. 60 No. 4, pp. 7-18.
- Frazier, P.A., Tix, A.P. and Barron, K.E. (2004), "Testing moderator and mediator effects in counseling psychology research", *Journal of Counseling Psychology*, Vol. 51 No. 1, pp. 115-34.
- Gardner, D.G. and Cummings, L.L. (1998), "Single-item versus multiple-item measurement scales: an empirical comparison", *Educational and Psychological Measurement*, Vol. 58 No. 6, pp. 898-915.
- Gefen, D., Straub, D. and Boudreau, M.C. (2000), "Structural equation modeling and regression: guidelines for research practice", *Communications of the Association for Information Systems*, Vol. 4 No. 7, pp. 1-77.
- Gotsi, M. and Wilson, A.M. (2001), "Corporate reputation: seeking a definition", *Corporate Communications*, Vol. 6, pp. 24-30.
- Gremler, D.D., Gwinner, K.P. and Brown, S.W. (2001), "Generating positive word-of-mouth communication through customer-employee relationships", *International Journal of Service Industry Management*, Vol. 12 No. 1, pp. 44-59.
- Gronholdt, L., Martensen, A. and Kristensen, K. (2000), "The relationship between customer satisfaction and loyalty: cross-industry differences", *Total Quality Management*, Vol. 11 Nos 4/5, pp. S509-14.
- Gustafsson, A. and Johnson, M.D. (2004), "Determining attribute importance in a service satisfaction model", *Journal of Service Research*, Vol. 7 No. 2, pp. 124-41.
- Hallowell, R. (1996), "The relationship of customer satisfaction, customer loyalty and profitability: an empirical study", *International Journal of Service Industry Management*, Vol. 7 No. 4, pp. 27-42.
- Judd, C.M. and Kenny, D.A. (1981), "Process analysis: estimating mediation in treatment evaluations", *Evaluation Review*, Vol. 5 No. 5, pp. 602-19.
- Lockwood, C.M. and Mackinnon, D.P. (1998), *23rd Annual Meeting of SAS Users Group International, Cary, NC*.
- Mackinnon, D.P., Lockwood, C.M., Hoffman, J.M., West, S.G. and Sheets, V. (2002), "A comparison of methods to test mediation and other intervening variable effects", *Psychological Methods*, Vol. 7 No. 1, pp. 83-104.
- Mittal, V. and Kamakura, W.A. (2001), "Satisfaction, repurchase intent, and repurchase behavior: investigating the moderating effect of customer characteristics", *Journal of Marketing Research*, Vol. 38 No. 1, pp. 131-42.

- Mukherjee, A., Nath, P. and Pal, M. (2003), "Resource, service quality and performance triad: a framework for measuring efficiency of banking services", *Journal of the Operational Research Society*, Vol. 54 No. 7, pp. 723-35.
- Oliver, R.L. (1999), "Whence customer loyalty?", *Journal of Marketing*, Vol. 63, special issue, pp. 33-44.
- Parasuraman, A. and Grewal, D. (2000), "The impact of technology on the quality-value-loyalty chain: a research agenda", *Journal of the Academy of Marketing Science*, Vol. 28 No. 1, pp. 168-74.
- Patrician, P.A. (2004), "Single-item graphic representational scales", *Nursing Research*, Vol. 53 No. 5, pp. 347-52.
- Ranaweera, C. and Prabhu, J. (2003), "On the relative importance of customer satisfaction and trust as determinants of customer retention and positive word of mouth", *Journal of Targeting, Measurement and Analysis for Marketing*, Vol. 12 No. 1, pp. 82-90.
- Rasmussen, J.L. (1988), "'Bootstrap confidence intervals: good or bad?': comments on Efron (1988) and Strube (1988) and further evaluations", *Psychological Bulletin*, Vol. 104 No. 2, pp. 297-9.
- Reibstein, D.J. (2002), "What attracts customers to online stores, and what keeps them coming back?", *Journal of the Academy of Marketing Science*, Vol. 30 No. 4, pp. 465-73.
- Rogerson, W.P. (1983), "Reputation and product quality", *The Bell Journal of Economics*, Vol. 14 No. 2, pp. 508-16.
- Ryan, M.J., Rayner, R. and Morrison, A. (1999), "Diagnosing customer loyalty drivers: partial least squares vs regression", *Marketing Research*, Vol. 11 No. 2, pp. 18-26.
- Slater, S.F. (1997), "Developing a customer value-based theory of the firm", *Journal of the Academy of Marketing Science*, Vol. 25 No. 2, pp. 162-7.
- Spiteri, J.M. and Dion, P.A. (2004), "Customer value, overall satisfaction, end-user loyalty, and market performance in detail intensive industries", *Industrial Marketing Management*, Vol. 33 No. 8, pp. 675-87.
- Srinivasan, S.S., Anderson, R. and Ponnarolu, K. (2002), "Customer loyalty in e-commerce: an exploration of its antecedents and consequences", *Journal of Retailing*, Vol. 78 No. 1, pp. 41-50.
- Turel, O. and Serenko, A. (2006), "Satisfaction with mobile services in Canada: an empirical investigation", *Telecommunications Policy*, Vol. 30 Nos 5-6, pp. 314-31.
- Wang, Y., Lo, H.P. and Hui, Y.V. (2003), "The antecedents of service quality and product quality and their influences on bank reputation: evidence from the banking industry in China", *Managing Service Quality*, Vol. 13 No. 1, pp. 72-83.
- Wang, Y., Lo, H.P. and Yang, Y.H. (2004), "An integrated framework for service quality, customer value, satisfaction: evidence from China's telecommunication industry", *Information Systems Frontiers*, Vol. 6 No. 4, pp. 325-40.
- Wanous, J.P., Reichers, A.E. and Hudy, M.J. (1997), "Overall job satisfaction: how good are single-item measures?", *Journal of Applied Psychology*, Vol. 82 No. 2, pp. 247-52.
- Wirtz, J. and Chew, P. (2002), "The effects of incentives, deal proneness, satisfaction and tie strength on word-of-mouth behaviour", *International Journal of Service Industry Management*, Vol. 13 No. 2, pp. 141-62.
- Wold, H. (1982), "Soft modeling: the basic design and some extensions", in Jöreskog, K.G. and Wold, H.E. (Eds), *Systems under Indirect Observation: Causality, Structure, Prediction*, North-Holland Publishing Company, Amsterdam.
- Woodruff, R.B. (1997), "Customer value: the next source for competitive advantage", *Journal of the Academy of Marketing Science*, Vol. 25 No. 2, pp. 139-53.

- Zeithaml, V.A. (1988), "Customer perceptions of price, quality and value: a means-end model and synthesis of evidence", *Journal of Marketing*, Vol. 52 No. 3, pp. 2-22.
- Zeithaml, V.A. (2000), "Service quality, profitability, and the economic worth of customers: what we know and what we need to learn", *Journal of the Academy of Marketing Science*, Vol. 28 No. 1, pp. 67-85.
- Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996), "The behavioral consequences of service quality", *Journal of Marketing*, Vol. 60 No. 2, pp. 31-46.

**Further reading**

- Alreck, P.L. (1994), "Statistical techniques", *The Survey Research Handbook*, McGraw Hill, New York, NY, Ch. 10.

**Corresponding author**

Alexander Serenko can be contacted at: [aserenko@lakeheadu.ca](mailto:aserenko@lakeheadu.ca)