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Expectations, Perceived Performance, and Customer Satisfaction for a Complex Service: The Case of Bank Loans

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Expectations, Perceived Performance, and Customer Satisfaction for a Complex Service: The Case of Bank Loans

Abstract

The models currently used to describe customers' satisfaction with products and services presume that customers have well-formed performance expectations. The present study uses data from the Swedish Customer Satisfaction Barometer to show that these models fail to describe customer satisfaction with bank loans, a complex, heterogeneous, and infrequently purchased service. Performance expectations are more likely an artifact of performance in this case and have no effect on satisfaction. This is quite different from other products and services where expectations are a stronger predictor of performance and have a positive effect on customer satisfaction.

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1 **Expectations, Perceived Performance, and Customer Satisfaction**
2 **for a Complex Service: The Case of Bank Loans**

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21 **Abstract**

22

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24 with products and services presume that customers have well-formed
25 performance expectations. The present study uses data from the Swedish
26 Customer Satisfaction Barometer to show that these models fail to
27 describe customer satisfaction with bank loans, a complex,
28 heterogeneous, and infrequently purchased service. Performance
29 expectations are more likely an artifact of performance in this case
30 and have no effect on satisfaction. This is quite different from other
31 products and services where expectations are a stronger predictor of
32 performance and have a positive effect on customer satisfaction.

33

34 **Introduction**

35

36 Nearly all the services that a bank provides are based upon the
37 storage and transfer of value. This transferring of value includes the
38 lending of money, or making of loans, which accounts for a major
39 portion of a bank's revenues (Shostack, 1977). The degree to which
40 customers are satisfied with their loan experience plays a central
41 role in their loyalty to the bank and its profitability (Nader et al.,

42 1995). Understanding the nature of customer satisfaction in this
43 context is, therefore, critically important. Existing conceptual
44 models of satisfaction suggest several possible scenarios. One model
45 holds that customer satisfaction is the difference between perceived
46 performance and customer expectations (i.e., disconfirmation;
47 Anderson, 1973; Oliver, 1993). Another views perceived performance and
48 expectations as having positive effects on satisfaction (Fornell,
49 1992; Westbrook and Reilly, 1983). Still another views market
50 expectations and perceived performance as one in the same (Johnson and
51 Fornell, 1991).

52 All of these scenarios presume that customers have well-formed
53 expectations at the onset of the money lending process. The fact that
54 bank loans represent a relatively intangible and complex service for
55 which production and consumption are inseparable suggests another
56 possibility. Unlike many traditional products and services, customer
57 expectations may be more an artifact of the service production process
58 and have no effect on satisfaction. Bank loans may be similar in this
59 regard to other highly complex products or services with which
60 customers have little or no experience, particularly where new
61 technologies are employed and customer benefits are difficult to
62 foresee (such as for video phones in homes or satellite navigation
63 systems in automobiles).

64 The present paper explores this possibility by examining the
65 nature of customer expectations, perceptions of performance, and
66 satisfaction for bank loans as a complex service and comparing it to
67 other goods and services. This comparison is made using data from the
68 Swedish Customer Satisfaction Barometer (SCSB) which tracks customer
69 expectations, perceptions of performance, and satisfaction for the
70 leading industries in Sweden. The results support the contention that
71 bank loans are different in that customer expectations are formed
72 during the service production process and have no effect on
73 satisfaction. The study has both theoretical and practical
74 implications for how we conceptualize customer satisfaction and
75 quality improvement in different contexts.

76

77 *Market level expectations, perceived performance, and customer*
78 *satisfaction*

79

80 Recent research on customer satisfaction and its antecedents
81 varies from micro-level studies of the individual (Anderson and
82 Sullivan, 1993; Cronin and Taylor, 1992; Oliver, 1993; Teas, 1993) to
83 more aggregate studies of entire market segments and industries
84 (Fornell 1992; Fornell and Johnson, 1993; Johnson et al., 1995). We
85 focus on the determinants of satisfaction at a market segment or
86 macro-psychological level (Katona, 1979); our aim is to understand the
87 aggregate expectations, performance perceptions, and level of
88 satisfaction for those who purchase and consume a product or service
89 offering. The primary reason is that we seek to develop an
90 understanding of the nature and antecedents of customer satisfaction
91 at a level that is both descriptive and predictive of market behavior.

92 While individual level studies provide important insights into
93 the range of possible psychological phenomena that may affect economic
94 behavior, many of these phenomena have a negligible effect on how
95 customers, as a whole, behave (Boulding, 1972; Katona, 1975, 1979,
96 1980; Strumpel, 1979; Wärneryd, 1988). Katona (1979) describes two
97 important benefits of aggregation in this context.

98 First, there are a number of individual differences (such as optimism-
99 pessimism) that constitute self-canceling random factors in the
100 aggregate. Second, a gain occurs in the analysis of aggregate data
101 through the law of large numbers. Aggregate level data thus provides
102 better measures that are more predictive of market behavior.

103 How one conceptualizes customer satisfaction also affects the
104 modeling and measurement of the construct and its antecedents. Johnson
105 et al. (1995) describe two basic conceptualizations of satisfaction,
106 transaction-specific and cumulative. Transaction-specific satisfaction
107 is a customer's transient evaluation of a particular product or
108 service experience (Cronin and Taylor, 1992; Parasuraman et al.,
109 1988). The cumulative model is more consistent with the literature in
110 both economics and economic psychology (Johnson and Fornell, 1991;
111 Meeks, 1984; Van Raaij, 1981), where customer satisfaction is

112 conceptualized as a cumulative construct that describes the total
113 consumption experience with a product or service to-date. Although
114 transaction-specific satisfaction may provide insights into particular
115 product or service encounters, cumulative satisfaction is arguably a
116 better predictor of future behavior (customer retention) and firm
117 performance (profitability). Our approach is both aggregate and
118 cumulative in its orientation. We now elaborate on the nature of bank
119 loans as a financial service and its implications for satisfaction
120 modeling.

121

122 *The intangibility and complexity of bank loans*

123

124 The borrowing of money embodies a number of unique
125 characteristics. The production and consumption of the loan experience
126 are inseparable. The core benefit is intangible, while the production
127 process itself is complex and heterogeneous. In this way it is unlike
128 many other consumption experiences.

129 There is a simultaneous production and consumption which
130 characterizes most banking services. In the interview and application
131 phase both parties to the loan try to come to an agreement concerning
132 the conditions and terms of the loan (amount, interest rate, number of
133 months to maturity, etc.). Prior to receiving any proceeds of the loan
134 customers pay, or declare their willingness to pay, for it. Since the
135 customer must be present during the production of the loan, including
136 the provision of personal information and arm's length transactions
137 such as making loan arrangements via telephone, inseparability forces
138 the buyer into contact with the production process (Carman and
139 Langeard, 1980). In a dynamic view, the borrowing of money may be
140 described as having many experience qualities (Nelson, 1970). A
141 customer only begins to fully understand just what is being purchased
142 during the course of the service production process; the perceived
143 performance of the bank in providing the loan is, to a large extent,
144 only observable once the service is provided.

145 Intangibility manifests itself in two ways. Bateson (1977)
146 distinguishes between physical and mental intangibility. Physically,

147 the borrowing of money cannot be touched by the customer - it is
148 impalpable. Banking services in general constitute performances rather
149 than objects; they can not be seen, felt, tasted, or touched in the
150 same way that tangible goods can be sensed (Zeithaml et al., 1985).
151 Unlike a number of other services (such as mail order or parcel
152 delivery), loans are also mentally intangible or difficult for
153 customers to cognitively grasp. Amid interest rates, fee schedules,
154 and payment options it is difficult to understand just what is being
155 purchased.

156 This mental intangibility is enhanced by a rather complex loan
157 process that includes up to eight different phases (Lindner, 1993):
158 (1) interview and application, (2) information gathering, (3) risk
159 analysis, (4) recommendation for approval, counter-offer, or denial,
160 (5) documentation preparation phase (security agreement, financing
161 statements, etc.), (6) establishing of a credit file, (7) monitoring,
162 and (8) payout. This process involves several bank officers (such as a
163 loan officer, credit analyst, and loan administration clerk). Yet a
164 large part of the process does not involve the customer directly; much
165 of the system remains invisible. Given that many customers have little
166 economic expertise, it is a difficult service to evaluate. The
167 customer is very dependent on the advice of the service personnel to
168 make loan related decisions. The exception here would be business loan
169 customers who, over time, may accumulate extensive experience and
170 resulting expertise.

171 Money lending is also a labor intensive service which makes it
172 rather heterogeneous. Langeard et al. (1981) point out that because a
173 number of different employees come in contact with an individual
174 customer, problems of consistency of behavior ensue. The quality and
175 essence of the service can vary widely from bank to bank, from
176 customer to customer, and from day to day. This is critical because
177 employee behavior is an important customer criteria in bank selection
178 and retention (Gwin and Lindgren, 1986; Parasuraman et al., 1985;
179 Parasuraman et al., 1988).

180 Finally, for most customers, money borrowing is not a frequently
181 'purchased' service. With the exception of business loans, customers

182 rarely have the amount of experience necessary to turn a rather
183 extended problem solving experience into a limited problem solving or
184 routinized purchase (Howard, 1977). The discussion suggests that
185 customers hold weak expectations, at best, for money lending services.
186 The expectations that do exist are likely an output or artifact of the
187 service production process which have a negligible impact on customer
188 satisfaction. The basic theoretical argument here is that because
189 performance information is complex and customer experience is limited,
190 expectations are weak and unlikely to affect satisfaction. As
191 mentioned earlier, bank loans may be similar in this regard to other
192 highly complex offerings with which customers have little or no
193 experience.

194 Contrast this scenario with most other products and services.
195 While some physical products may be complex, they are more tangible
196 than bank loans. There is also greater homogeneity in their production
197 and customers have more experience with them. While physically
198 intangible, other services are typically less complex, involve fewer
199 service personnel, and are also more frequently consumed. In both
200 cases, customers are likely to have stronger expectations prior to any
201 given product or service purchase and consumption experience. This
202 should affect the ability of different models to describe and explain
203 aggregate customer satisfaction. We now turn our attention to these
204 different models.

205

206 **Alternative satisfaction models**

207

208 Prior research suggests at least three alternative, aggregate
209 customer satisfaction models. Our discussion suggests a fourth. We
210 shall refer to these models as: (1) the performance model, (2) the
211 disconfirmation model, (3) a rational expectations model, and (4) the
212 expectations-artifact model. Each model is illustrated in Fig. 1.

213

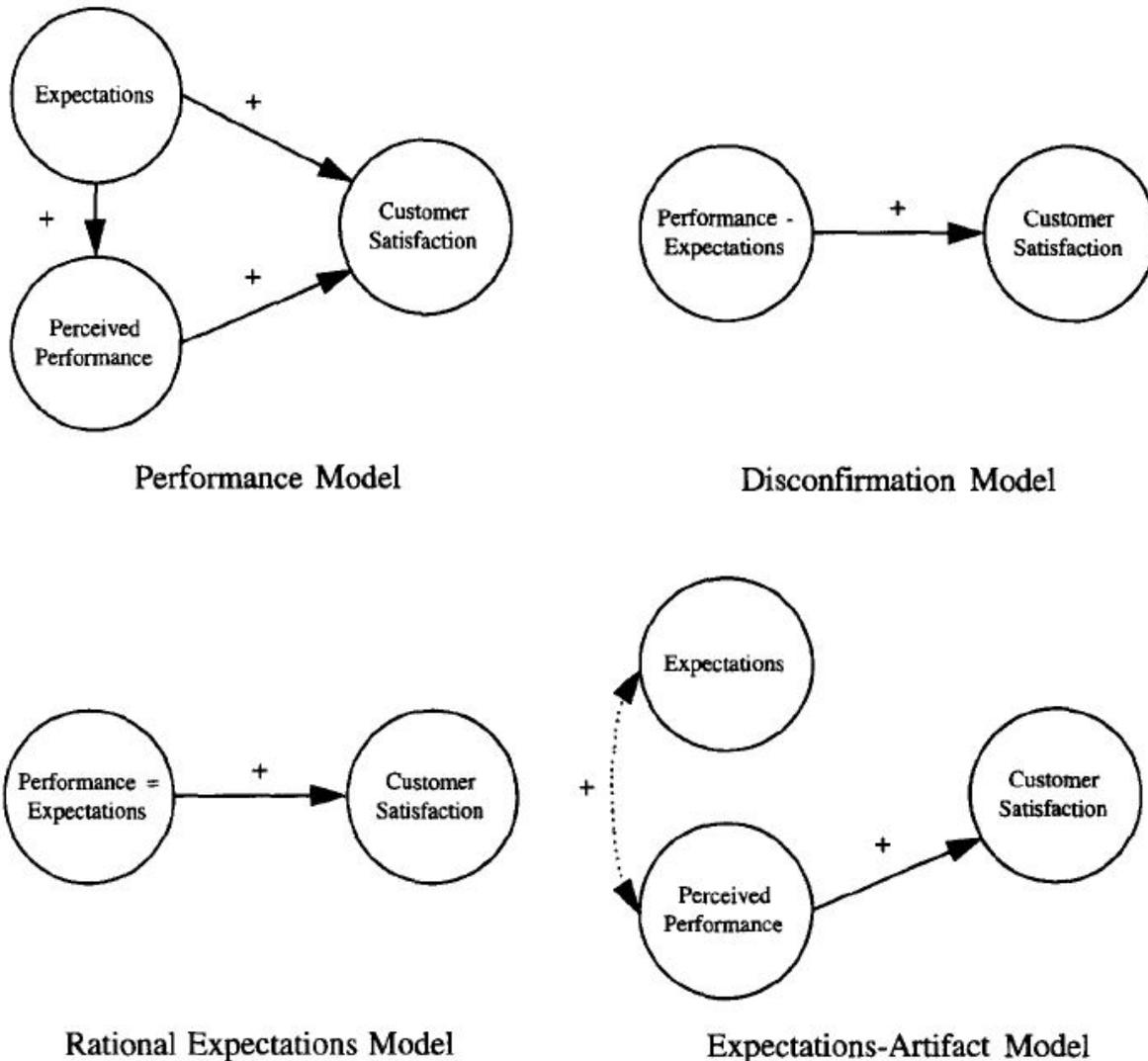


Fig. 1. Alternative customer satisfaction models.

214
215

216 *Performance model*

217

218 The performance model serves as the conceptual foundation for the
 219 SCSB (Fornell, 1992; Johnson and Fornell, 1991). The main predictions
 220 of the model are that customers' perceptions of product or service
 221 performance, and their expectations regarding that performance, have
 222 positive effects on customer satisfaction (see Fig. 1). Performance is
 223 defined here as the customers' perceived level of product or service
 224 quality relative to the price they pay (benefits received for costs

225 incurred). That perceived performance or 'value' has a positive effect
226 on satisfaction follows from the notion of a value-percept disparity
227 (Westbrook and Reilly, 1983); the greater the product's or service's
228 ability to provide that which customers need, want, or desire,
229 relative to the price or costs incurred, the more satisfied those
230 customers should be with their purchase and consumption experience
231 (Churchill and Surprenant, 1982; Tse and Wilton, 1988). Put
232 differently, customer satisfaction should increase the more one
233 provides desired product or service benefits per dollar (Lancaster,
234 1971).

235 Expectations should have a direct positive effect on satisfaction
236 due to their role as an anchor in the satisfaction evaluation process
237 (Fornell and Johnson, 1993; Oliver, 1980; Van Raaij, 1989; Schelling,
238 1978). Customer expectations contain important information as to how a
239 product or service has performed in the past as well as how it is
240 likely to perform in the future. This information serves as an anchor
241 that is continually adjusted based on more recent performance
242 information. Assessments of satisfaction are, therefore, maintained in
243 the vicinity of the expectations resulting in a positive expectation
244 effect. Taken together, the positive effects of expectations and
245 perceived performance on satisfaction may be viewed as the macro-
246 psychological equivalent to the cognitive process of anchoring and
247 adjustment (Tversky and Kahneman, 1974).

248 The relative size of the performance and expectation effects
249 should depend on the relative 'strength' of these constructs (Alloy
250 and Tabachnik, 1984). The stronger or more salient performance
251 information is relative to expectations, the greater the relative
252 positive effect of perceived performance on customer satisfaction. The
253 weaker or more ambiguous performance information is relative to
254 expectations, the greater the effect of expectations, as an anchor, on
255 satisfaction. In general, service performance information is weaker
256 than product performance information (Bateson, 1977; Zeithaml, 1985).
257 For example, when an automobile will not start, performance is denied
258 and dissatisfaction is a likely result. In contrast, the extent to
259 which the 'grumpiness' or 'helpfulness' of a service provider affects

260 satisfaction is more likely buffered by customers' well-formed
261 expectations or image of the service establishment. Therefore, holding
262 the strength of expectations constant, we expect the predicted
263 positive effect of expectations on customer satisfaction to be greater
264 for services than for products.

265 Also included in the performance model is a positive effect of
266 expectations on perceived performance. This effect should be
267 interpreted as the ability of aggregate customer expectations' to
268 predict performance. This predictive ability should be greatest when
269 customers have considerable experience with a predictable, or low
270 variance, performer. We again expect this effect to vary from bank
271 loans, to services, to products in light of our discussion. Given
272 customers' lack of experience with the complex and heterogeneous
273 service of money lending, expectations should not be as strongly
274 related to performance as for other products and services. Given the
275 heterogeneity or inherent variability of services relative to products
276 (Grisnoos, 1983), product expectations should be more predictive of
277 performance than service expectations. In the extreme, expectations
278 and performance may be one in the same. This is the essence of the
279 rational expectations model described shortly.

280

281 *Disconfirmation model*

282

283 The disconfirmation model (also called the
284 confirmation/disconfirmation model) posits that the degree to which
285 perceived performance exceeds expectations (positive disconfirmation)
286 increases the level of satisfaction while performance levels below
287 expectations (negative disconfirmation) decrease the level of
288 satisfaction (Anderson, 1973; Oliver, 1980; Oliver, 1993). In Fig. 1,
289 satisfaction is a positive function of the difference between
290 performance and expectations (performance - expectations). In contrast
291 to the performance model, the disconfirmation model predicts a
292 decrease in satisfaction with increased expectations (Yi, 1991).
293 Rather than an anchor, expectations serve as a standard or point of

294 contrast against which customers are presumed to evaluate performance
295 information when judging satisfaction.

296 This model may be problematic in the context of aggregate,
297 cumulative customer satisfaction (Johnson and Fomell, 1991). It
298 requires that an entire market segment hold inaccurate performance
299 expectations, or be unable to learn from experience, which is
300 unlikely. It also presumes that the absolute level of perceived
301 performance is unimportant; whether expectations and performance are
302 high or low, it is the difference between them that affects the level
303 of satisfaction. Disconfirmation thus ignores the value-percept
304 disparity. Recent individual level studies also highlight the
305 conceptual and methodological limitations of disconfirmation-type
306 models (Cronin and Taylor, 1992, 1994; and Teas,
307 1993, 1994).

308 Nevertheless, a case can be made for including the
309 disconfirmation model in our analyses and comparisons based on its
310 popularity and continued empirical support in certain contexts
311 (Oliver, 1993). The SERVQUAL model (Parasuraman et al., 1988, 1994),
312 which is based on the disconfirmation principle, is a particularly
313 popular way of assessing the quality of financial services. An
314 important reason for its popularity is that the concept of 'meeting
315 and exceeding' customer expectations is seemingly simple for both
316 managers and service personnel to comprehend and implement in a
317 banking context. As argued previously, there is also significant
318 heterogeneity in the provision of bank loans. This may create
319 discrepancies between perceived performance and expectations which
320 increase the likelihood of disconfirmation effects.

321

322 *Rational expectations satisfaction model*

323

324 Our focus on aggregate expectations, perceptions, and evaluations
325 suggests that rational expectations may also provide a good
326 description of the antecedents of customer satisfaction with bank
327 loans. The rational expectations hypothesis (Muth, 1961) argues that
328 the mean expectation of economic agents in a market is equivalent to

329 the market's output, which in this context is a bank's actual
330 performance when providing a loan. Even though customer expectations
331 for this service may be weak, inaccurate, or non-existent for
332 individual customers, the whole may be more than the sum of its parts.
333 Aggregate expectations may be far more accurate or rational. As
334 Boulding (1972, p. 466) argues, "the summation of ignorance produces
335 knowledge." Rational expectations suggests that perceived performance
336 and expectations are redundant (performance = expectations). As
337 depicted in Fig. 1, they should have a single positive effect on
338 satisfaction.

339

340 *Expectations-artifact model*

341

342 The nuances of money lending suggest that all three of these
343 models provide an inadequate description of customer satisfaction with
344 bank loans. At best, customers hold weak expectations for money
345 lending services. Their expectations are more likely an output or
346 artifact of a complex, intangible, and infrequently experienced
347 service production process. The primary determinant of customer
348 satisfaction should be perceived performance. Expectations should have
349 no positive or negative effect on satisfaction because they serve as
350 neither an anchor, as in the performance model, nor a standard of
351 comparison, as in the disconfirmation model, for evaluating
352 satisfaction. At the same time, perceived performance should covary
353 with customers' stated expectations. Performance gives rise to the
354 expectations that customers report. The model in Fig. 1 posits a
355 direct positive effect of perceived performance on satisfaction and a
356 positive relationship between performance and expectations, without
357 linking expectations directly to satisfaction, to capture these
358 predictions.

359 An alternative prediction is that even customer satisfaction with
360 bank loans is better described by either the performance or
361 disconfirmation model. While customers may not have much direct
362 experience in obtaining loans, they may have some significant prior
363 expectations of performance based on other services they obtain from

364 the bank (such as a checking account), positive or negative word of
365 mouth, or simply their general impression of banks. If strong enough,
366 these expectations may indeed serve as either an anchor in evaluating
367 satisfaction or as a benchmark against which performance is judged.

368 How one implements customer satisfaction and quality improvement
369 programs depends on which of the four models best describes the
370 situation. If an increase in expectations has a positive effect on
371 satisfaction for bank loans, then it will be critical to include
372 expectations in a bank's customer satisfaction modeling and
373 measurement system. More specifically, the size of a positive
374 expectations effect indicates just how long it takes for changes in
375 product or service performance to be completely reflected in measures
376 of customer satisfaction. If expectations are more of a by-product of
377 the loan production process, then it may be counterproductive to focus
378 on expectations at all; service personnel should focus on improving
379 performance rather than meeting or exceeding customer expectations.

380

381 **Empirical study**

382

383 Our empirical study uses aggregate, firm level measures of
384 performance expectations, perceived performance, and customer
385 satisfaction available from the Swedish Customer Satisfaction
386 Barometer (SCSB; Fornell, 1992). Each year approximately 100,000
387 representative Swedish customers are contacted by telephone and
388 screened to obtain a sample of customers who have had some recent
389 experience with the product or service in question. The resulting
390 sample of approximately 25,000 customers is then subjected to a
391 telephone interview regarding one or more product or service. The
392 interviews focus on the firms 'flagship brand,' such as money lending
393 in the case of banks, with sample sizes averaging approximately 250
394 respondents per firm.

395 Customer are first asked to rate how well they expected the
396 product or service to perform which serves as our measure of
397 expectations (E1). Perceived performance is operationalized using two
398 subsequent measures, a rating of how much the customer paid relative

399 to how well the product or service has performed (P~) and a rating of
400 how well the product or service has performed relative to how much the
401 customer paid (P2). Both items measure perceived performance as a
402 value-percept disparity. We use Fornell's (1992) three measures to
403 operationalize satisfaction, customer ratings of their confirmation of
404 expectations (S 1), their overall satisfaction (S 2), and the
405 product's or service's distance from the customers' hypothetical ideal
406 (\$3). All of the survey ratings used ten-point scales. Our sample
407 includes 18 of the 32 industries in the SCSB. We exclude the
408 routinized purchase and consumption of food and beverage products
409 because expectations are not measured. We also exclude monopolies so
410 as not to mix market (firm) and industry level data involving both
411 regulated and unregulated industries.

412

413 *Industry groupings and analysis*

414

415 The antecedents of satisfaction were examined for three separate
416 classes of firm-level observations to test our predictions. The first
417 class includes those firms who provide public banking service (5
418 firms). Because these firms were surveyed on the basis of their money
419 lending activities, they provide an excellent test of our predictions.
420 As mentioned, business to business money lending is quite different
421 and may be better described as a routine or limited problem solving
422 experience. The banks' business loan customers were surveyed
423 separately and these observations were excluded from the analysis. The
424 second class of interest is other services, including airlines (2),
425 mail order houses (4), newspapers (5), shipping companies (5), travel
426 charter companies (4), business insurance (4), automobile insurance
427 (5), life insurance (5), and television broadcasters (3) for a total
428 of 37 service-oriented firms. The third group contains firms that
429 market primarily products or product retail establishments. These
430 relative 'non-services' include automobile manufacturers (9), clothing
431 retailers
432 (4), mainframe computers (4), personal computers (3), department
433 stores (3), furniture retailers (3), gas stations (6), and grocery

434 stores (3) for a total of 35 firms. Observations were available from
435 all 77 firms for, 1990, 1991, and, 1992. Because we have fewer
436 observations for banks than for other services and non-services, the
437 data for the three years was stacked yielding 15, 111, and 105
438 observations.

439 The performance model and expectations-artifact model were
440 estimated using the six survey measures (E_1 , P_1 , P_2 , S_1 , S_2 , S_3) as
441 reflective indicators of experience, performance, and satisfaction
442 respectively in a system of equations. The disconfirmation model used
443 the three measures of satisfaction along with two difference scores, P_1
444 - E_1 and $P_2 - E_1$, to operationalize the performance minus expectations
445 construct. The rational expectations model used the three measures of
446 satisfaction and two measures to operationalize the performance =
447 expectation construct, E_1 and P_1 where P_1 is an average of the P_1 and
448 P_2 variables used in the other three models. An average of the
449 performance measures was used in this case so that an equal number of
450 expectation-based and performance-based measures operationalize the
451 performance = expectations latent variable.

452 Some comment is in order as to why a disconfirmation rating is
453 used to operationalize satisfaction rather than disconfirmation in the
454 disconfirmation model. Because satisfaction is an abstract construct,
455 it should be operationalized using a variety of proxies of which
456 disconfirmation of expectations is one (Fornell, 1992; Johnson and
457 Fornell, 1991). Our estimation only extracts that portion of the
458 disconfirmation rating that is common to all three satisfaction
459 measures. We use difference scores to operationalize disconfirmation,
460 rather than direct ratings, which is consistent with the SERVQUAL
461 approach (Parasuraman et al., 1988). Although difference scores may
462 compound problems of reliability (Peter et al., 1993), this problem is
463 lessened by our use of aggregates. Finally, if the use of
464 disconfirmation measures on both sides of the model introduces a bias,
465 it would be evident from the output of the estimation.

466 The four alternative structural models in Fig. 1 were estimated
467 for each of the three classes of industries using partial least
468 squares (PLS; Wold, 1982, 1989). PLS is an iterative estimation

469 procedure that does not impose distributional assumptions on the data.
470 Thus the procedure is better suited to causal model estimation
471 involving small samples (as in the case of bank loans here) than are
472 other methods such as covariance structure analysis (Fornell and
473 Bookstein, 1982; McGill et al., 1994). The procedure provides the
474 information necessary to simultaneously evaluate both the measurement
475 and structural portions of the model (Löhmler, 1989). The
476 reliability of the expectations, performance, disconfirmation, and
477 satisfaction measures is judged as satisfactory if the standardized
478 loadings (which range from 0 to 1) are high and the residuals are low.
479 1 The theoretical or latent variable relationships are judged on two
480 criteria: (1) whether the estimated path coefficients are reliable and
481 in the predicted direction, and (2) the amount of variance explained
482 (R^2) in our endogenous latent variable (customer satisfaction).
483 Tukey's jack-knifing method was used to generate standard errors for
484 each of the model parameters in order to examine the reliability of
485 the effects (Fornell and Barclay, 1993). When we report effects or
486 differences in effects in our discussion, the jack-knife results
487 support their reliability.

488 The output of the estimations is reported in Tables 1-3 for bank
489 loans, other services, and non-services respectively. The standardized
490 measurement loadings are reported in the top-half of each table. The
491 latent variable effects are reported in the lower-half of each table.
492 These effects were estimated using the original measurement scales in
493 order to compare the different samples of firms (LohmSller, 1984). At
494 the bottom of each table is the R^2 for satisfaction. Note that while
495 the performance model has an advantage in the degrees of freedom used
496 to explain satisfaction, the theoretically important question here is
497 whether or not expectations have a separate positive effect on
498 satisfaction across the
499 samples.

500

Table 1
 Estimation results for public bank loans ($n = 15$)

	Model			
	Performance	Disconfirmation	Rational expectations	Expectations-artifact
Measurement loadings				
E_1	1.000	-	0.637	1.000
P_1	0.912	-	0.960	0.912
P_2	0.942	-	-	0.942
$P_1 - E_1$	-	0.902	-	-
$P_2 - E_1$	-	0.943	-	-
S_1	0.938	0.936	0.940	0.938
S_2	0.912	0.909	0.912	0.912
S_3	0.966	0.970	0.965	0.966
Effects				
$E \rightarrow S$	-0.059	-	-	-
$E \rightarrow P$	0.397	-	-	-
$P \rightarrow S$	0.914	-	-	0.891
$P - E \rightarrow S$	-	0.713	-	-
$P = E \rightarrow S$	-	-	0.871	-
$P \rightarrow E$	-	-	-	0.397
Satisfaction R^2	0.797	0.508	0.759	0.794

Note: E = expectations, P = perceived performance, S = customer satisfaction.

501

502

503 *Results*

504

505 For bank loans, the measurement loadings are large and positive
 506 in each case. The one exception is the rational expectations model
 507 where the expectations measure (E_1) is a weaker indicator of
 508 performance = expectations than is the performance measure. This
 509 suggests that performance and expectations are not as 'redundant' as
 510 the model predicts. The performance and expectations-artifact models,
 511 which explain approximately 80% of the variance in satisfaction across
 512 the banks, are better predictors of satisfaction than the
 513 disconfirmation and rational expectations models. For both the
 514 performance and expectations-artifact models, the relationship between
 515 performance and expectations is moderate (0.40) and the effect of
 516 performance on satisfaction is large (0.91 versus 0.89). However, the
 517 jack-knife results support no effect of expectations on satisfaction

518 in the performance model. The root mean square residual between
 519 expectations and performance in the expectations-artifact model is
 520 also very small (0.02), again indicating no relationship between
 521 expectations and satisfaction for bank loans. These results support
 522 the expectations-artifact model in the case of bank loans.

523 Contrast this with the other services. The measurement loadings
 524 are again large and positive in each case, with the possible exception
 525 of the P_1 measure in the performance and expectation artifact models. 2
 526 The performance model explains the greatest variance in satisfaction,
 527 followed by the rational expectations model, the expectations-artifact
 528 model, and the disconfirmation model. The performance model does the
 529 best job of both capturing the relationships and explaining
 530 satisfaction in this case ($R^2 = 0.80$). All of the path coefficients in
 531 the performance model are reliable and in the predicted direction.
 532

Table 2
 Estimation results for other services ($n = 111$)

	Model			
	Performance	Disconfirmation	Rational expectations	Expectations-artifact
Measurement loadings				
E_1	1.000	-	0.787	1.000
P_1	0.619	-	0.773	0.620
P_2	0.987	-	-	0.987
$P_1 - E_1$	-	0.994	-	-
$P_2 - E_1$	-	0.923	-	-
S_1	0.936	0.997	0.936	0.934
S_2	0.985	0.915	0.985	0.985
S_3	0.962	0.839	0.962	0.963
Effects				
$E \rightarrow S$	0.389	-	-	-
$E \rightarrow P$	0.427	-	-	-
$P \rightarrow S$	0.656	-	-	0.822
$P - E \rightarrow S$	-	-0.227	-	-
$P = E \rightarrow S$	-	-	0.856	-
$P \rightarrow E$	-	-	-	0.423
Satisfaction R^2	0.800	0.052	0.733	0.676

Note: E = expectations, P = perceived performance, S = customer satisfaction.

533

534

Table 3
 Estimation results for non-services ($n = 105$)

	Model			
	Performance	Disconfirmation	Rational expectations	Expectations-artifact
Measurement loadings				
E_1	1.000	–	0.735	1.000
P_1	0.484	–	0.823	0.484
P_2	0.994	–	–	0.994
$P_1 - E_1$	–	0.538	–	–
$P_2 - E_1$	–	0.912	–	–
S_1	0.957	0.962	0.956	0.956
S_2	0.959	0.951	0.962	0.959
S_3	0.926	0.928	0.923	0.926
Effects				
$E \rightarrow S$	0.096	–	–	–
$E \rightarrow P$	0.555	–	–	–
$P \rightarrow S$	0.833	–	–	0.886
$P - E \rightarrow S$	–	-0.282	–	–
$P = E \rightarrow S$	–	–	0.781	–
$P \rightarrow E$	–	–	–	0.555
Satisfaction R^2	0.792	0.080	0.609	0.786

Note: E = expectations, P = perceived performance, S = customer satisfaction.

535
 536 Both performance and expectations have positive effects on
 537 satisfaction (0.66 and 0.39) while expectations predict performance
 538 (0.43). The R^2 for the disconfirmation model is quite low (0.05) and
 539 the estimated effect of disconfirmation on satisfaction is negative
 540 rather than positive (-0.23). This negative effect of disconfirmation,
 541 while inconsistent with the disconfirmation model's predictions, is
 542 consistent with the observed positive effect of expectations on
 543 satisfaction for the performance model.

544 For the non-services, the measurement model results generally
 545 mirror those for other services. The performance and expectations-
 546 artifact models dominate in their ability to explain 79% of the
 547 variance in satisfaction. In both cases there are large relationships
 548 between expectations and performance (0.55) and between performance
 549 and satisfaction (0.83 versus 0.89). In the performance model, the
 550 estimated effect of expectations on satisfaction is positive (0.10)
 551 albeit smaller than that observed for other services. As both
 552 performance and expectations have reliable positive effects on

553 satisfaction, the performance model again provides the best
554 description of satisfaction in this case.

555 Comparing the predictive power of expectations across the three
556 samples of firms (using the performance model results) also supports
557 this conclusion. Customers are better at predicting performance for
558 non-services (0.55), than for other services (0.43), than for bank
559 loans (0.40). Although the difference in the size of the effect
560 between other services and bank loans is small, the jack-knife results
561 support the reliability of the difference. In the aggregate, customers
562 apparently learn more of what level of performance to expect when they
563 have tangible and reliable experience on which to draw. It is more
564 difficult to argue that, for such things as automobiles or department
565 stores, expectations are simply an artifact of performance.

566 In sum, the expectations-artifact model provides the best
567 description of customer expectations, perceived performance, and
568 customer satisfaction in the case of bank loans. Consistent with the
569 limited experience that customers have with this complex and
570 heterogeneous service, expectations serve as neither an anchor nor a
571 standard in evaluating satisfaction. Rather, customers' stated
572 expectations are best interpreted as an artifact of the service
573 production and consumption process. The performance model provides the
574 better description for the other products, product retailers, and
575 services that we studied. Both performance and expectations have a
576 positive effect on satisfaction in these cases.

577

578 **Discussion**

579

580 Our experience leads us to expect a certain level of performance
581 from most of the products and services that we purchase and consume.
582 It is natural that the models most commonly used to analyze our
583 satisfaction with these products and services take expectations as a
584 given. The present study demonstrates that these models are not as
585 applicable to a complex and infrequently experienced service such as
586 bank loans. Customers stated performance expectations for money
587 lending services had no effect on satisfaction among the firms studied

588 here. Rather, our results suggest that these expectations are most
589 likely an artifact of the service production process. In contrast,
590 expectations both predicted performance and had a positive effect on
591 customer satisfaction for the other products and services studied. As
592 mentioned earlier, one can imagine other product and service
593 categories where there is a lack of well-formed expectations regarding
594 how a product or service will perform as well as what the relevant
595 performance attributes might be (particularly technology-driven
596 products or services whose uses are evolving).

597 The study provides insight into previous research using the SCSB
598 data-base which finds a general expectations effect (Fornell and
599 Johnson, 1993). For example, estimation of the performance model in
600 Fig. 1 using the entire sample of 77 product and service firms (231
601 observations) yields a reliable positive effect of expectations on
602 customer satisfaction (0.24). Our results reveal that this effect is
603 concentrated among frequently purchased and consumed services and, to
604 a lesser extent, among products and product retailers. One likely
605 explanation for these findings centers on the relative strength of
606 customers' expectations versus incoming performance information. The
607 lack of an expectations effect for bank loans is consistent with a
608 lack of well-formed expectations. Although expectations are well-
609 formed for most products and product retailers, the salience or
610 strength of performance information likely limits the positive effect
611 that these expectations have on satisfaction. For other services,
612 well-formed expectations combined with relatively ambiguous or weak
613 performance information likely increases customers' reliance on
614 expectations when evaluating their purchase and consumption
615 experience. An important implication is that expectations serve as a
616 sizable buffer for other services. It will take significantly longer
617 for changes in firm performance to be captured in evaluations of
618 customer satisfaction than is the case for non-services and bank
619 loans.

620 This is not to say that customer expectations are completely
621 irrelevant in a bank loan context. Rather, expectations play a very
622 different strategic role. Because they are more an output than an

623 input, the production process effectively positions a bank in the
624 minds' of its loan customers. This could have dramatic effects on the
625 bank's ability to market other financial services to their customers.
626 In contrast, the expectation, image, or position associated with most
627 other products and services is more established.

628 One limitation of the study is that the expectations measure is
629 collected retrospectively at the same time as the performance and
630 satisfaction measures. Future research should explore the size of the
631 expectations effect for the categories of products and services
632 studied here using expectations, performance, and satisfaction
633 measures that are more separated in time. However, the research
634 conducted to-date using the SCSB data supports the reliability of the
635 expectations measure and its ability to isolate a separate
636 expectations construct (Anderson and Sullivan 1993; Fornell, 1992;
637 Fornell and Johnson, 1993; Johnson et al., 1995).

638 A second major finding of this study is that, across all of the
639 firms and industries studied, the level of performance or value
640 provided by the product or service was the primary determinant of
641 customer satisfaction. The disconfirmation model, in which the gap
642 between performance and expectations determines the level of customer
643 satisfaction, provided the poorest description of customer
644 satisfaction in each case. While this result is not surprising given
645 the limitations of the disconfirmation model, it is important in light
646 of the popularity of the model in the financial services area. While
647 the model may be intuitive and easy to explain to both managers and
648 service providers, it is dominated by performance-based models in its
649 ability to explain customer satisfaction.

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651

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