

MITIGATING THE EFFECT OF SERVICE ENCOUNTERS

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Abstract

Although marketers believe that encounters with service employees are a major determinant of customers' perceived service quality and value, there is little empirical evidence that quantifies this relationship. This paper considers the role of employee service encounters, such as repair visits and sales calls, within a comprehensive model of customers' assessments of service quality and value. It is estimated with survey data that describe small business customers' ratings of a local telephone company. In contrast with marketing folklore, most employee service encounters do not affect perceived service quality, but they have a strong effect on perceived service value. By quantifying the effect of sales calls, repair visits, billing contacts and so forth, we find that service encounters frequently do not compensate for service failures and disruptions.

In recent years, service companies have placed an increased priority on delivering quality to customers. However, they have experienced difficulties in delivering quality because, for most services, quality is created when the customer directly interacts with the service firm (Lovelock 1983). As a result, managers and researchers have increasingly recognized the critical role of the service encounter in determining customers' perceptions of service quality (Czepiel et al 1985; Sellers 1990). A variety of rules of thumb have emerged in the service industry, such as: "It takes twelve positive service experiences to overcome a negative one" (Liswood 1989) and "Get it right the first time" (Albrecht and Bradford 1990, p.101).

Surprisingly, there is little empirical evidence that quantifies the impact of service encounters on customers' global assessments of services, such as perceived service quality. Prior research has focused on the factors influencing customers' assessments of service encounters (cf., Booms and Bitner 1981) and the factors underlying customers' assessments of service quality (cf., Parasuraman, Zeithaml and Berry 1985) -- with few attempts to link the two research streams. Hence, the purpose of this paper is to quantify the impact of sales calls, repair visits and other service encounters on customers' global assessments of service.

BACKGROUND

Empirical research has focused on the physical surroundings, participants and processes that characterize the service encounter (Bitner, Booms and Tetreault 1990; Booms and Bitner 1981; Crosby and Stephens 1987; Czepiel et al 1985). Several experiments highlight the influence of role performance and role expectations on customers' assessments of service quality (Solomon et al 1985; Surprenant and Solomon 1987). However, there is little empirical research concerning the effect of service encounters in customers' global evaluations of services (cf. Czepiel 1990). Customer attitudes concerning a product or service have been modelled as a function of prior attitudes, mediated by customer dis/satisfaction with respect to a particular transaction (e.g., Oliver 1981; LaBarbera and Mazursky 1983; Bolton and Drew 1991a). In a path analysis based on the data obtained in her travel story experiment, Bitner (1990) found that attributions and service encounter satisfaction were antecedents of perceived service quality ($p \leq 0.05$). She found that service encounter satisfaction and perceived service quality were positively related to behavioral intentions ($p \leq 0.05$). Similarly, Bolton and Drew (1991b) developed a model in which customer dis/satisfaction constructs were hypothesized

to be antecedents of service quality and value and estimated it with consumer survey data. They found that perceptions of service performance and disconfirmation experiences were positively related to perceived service quality, and that all three constructs were positively related to perceived value ($p \leq 0.05$).

A MODEL OF SERVICE ENCOUNTER OUTCOMES

The local telephone company provides a bundle of services to small business customers, including voice and data transmission, long distance access, operator services, repair, installation and billing services. Voice/data transmission and long distance access are the telephone company's core services, and they are continuously provided. Repair, installation, sales and billing are facilitating services that potentially entail discrete customer-employee interactions. Given the complexity of the local telephone service bundle, four equations were specified to capture the relationships between service encounters and customers' global assessments of telephone service. BILLING and EASY-BUS were selected as dependent variables because they can shed new light on the impact of the service encounter. BILLING represents customers' attitudes towards a service encounter that may or may not entail interaction with company representatives. EASY-BUS represents customers' global assessment of all service encounters. Service QUALITY and VALUE are critical constructs in the marketing literature's discussion of customers' global assessments of services. Table 1 summarizes the model specification, hypotheses, and measures.

Billing

BILLING was hypothesized to be positively related to his assessment of the accuracy of the bill (ACCURATE) and the clarity of the bill (EASY). In addition, it was hypothesized to depend on whether the customer had no encounter with a billing representative in the past three months (NO-CONTACT), and -- if there was a encounter -- his/her satisfaction with the billing representative (BILLREP). That is,

$$(1) \quad \text{BILLING} = g_1 (\text{ACCURATE}, \text{EASY}, \text{NO-CONTACT}, \text{BILLREP}).$$

An encounter with a billing representative implies a service failure, so the coefficient of NO-CONTACT should be positive. A satisfactory service encounter should lead to a more positive attitude about billing service.

Easy to Do Business

This study hypothesizes that a customer assesses how easy it is to do business with a service company by weighing his/her satisfaction with seven different kinds of service encounters: TRAINING service for telecommunications products and services, maintenance service (MAINTAIN), EMERGENCY service, REPAIR service, installation service (INSTALL), SALES service, and BILLING service. All customers have access to training, maintenance, emergency services and billing services. However, not all customers encounter repair, installation and sales services during a given period. Hence, indicator variables were used to represent the absence of an encounter with a specific service (NO-REPAIR, NO-INSTALL and NO-SALES). If a customer has not experienced a recent service encounter, we hypothesize that his/her rating of EASY-BUS is likely to be higher. In addition, EASY-BUS was hypothesized to be positively related to the customer's assessment of the RELIABILITY of all services. In summary,

$$(2) \quad \text{EASY-BUS} = g_2 (\text{TRAINING, MAINTAIN, EMERGENCY, REPAIR, NO-REPAIR,} \\ \text{INSTALL, NO-INSTALL, SALES, NO-SALES, BILLING, RELIABILITY}).$$

Service Quality

Following (Bolton and Drew 1991b), QUALITY was modeled as a function of the customer's satisfaction with four services that are continuously provided: connections on incoming and outgoing LOCAL calls, VOICE transmission, DATA transmission and technological leadership (TECH-LEADER). (Technological leadership can be provided to small business customers through marketing activities that provide information about new products and services.) It was also modeled as a function of the customer's satisfaction with seven different kinds of discrete service encounters by incorporating the variables that appeared in the EASY-BUS equation, plus the RELIABILITY of all services. Since service quality also depends on prior attitudes, a business customer's assessment of the overall QUALITY of all services provided by the local telephone company is hypothesized to depend on the customer's assessment of the extent of improvement in telephone service compared to three months ago (IMPROVE). Thus, a customer's formation of an assessment of the overall quality of local telephone services can be summarized by the following equation, where the effects of all the variables are hypothesized to be positive.

$$(3) \quad \text{QUALITY} = g_3 (\text{LOCAL, VOICE, DATA, TRAINING, MAINTAIN,} \\ \text{EMERGENCY, REPAIR, NO-REPAIR, INSTALL, NO-INSTALL,}$$

SALES, NO-SALES, BILLING, RELIABILITY, IMPROVE, TECH-LEADER).

Service Value

A customer's assessment of the VALUE of telephone services will chiefly depend on his assessment of the overall QUALITY of telephone services. Variables representing the customer's sacrifice (monetary and non-monetary costs) are ignored because local telephone service is regulated, so that prices are not free to fluctuate, and the service has no direct competitors. However, the customer's intermediate perceptions of core and facilitating telephone services and disconfirmation may be weighed differently in assessing VALUE than in assessing QUALITY. It is hypothesized that facilitating services (EASY-BUS) and technological leadership (TECH-LEADER) and the customer's prior attitudes, as measured by his assessment of the improvement in telephone services (IMPROVE), will be weighed more heavily. These notions can be summarized by the following equation, where the effects of all variables are hypothesized to be positive.

$$(4) \quad \text{VALUE} = g_4 (\text{QUALITY, EASY-BUS, TECH-LEADER, IMPROVE}).$$

THE DATA BASE

The data describe the responses of 1,064 telecommunication decision makers to a survey administered quarterly in 1985, 1986 and 1987. The survey is administered by telephone and the cumulative response rate is about 56%. These data represent a probability sample of small business customers from a GTE operating company (encompassing four states). A small business customer has two lines and a monthly bill between \$500 and \$5,000. Typical examples include small retail stores, restaurants, and insurance agents. The respondents can be decomposed into two separate market segments: customers subscribing to voice telecommunications services only (870 observations) and customers subscribing to voice and data telecommunications services (194 observations). Statistical tests indicated that these two groups could not be pooled.

In the survey, business customers are asked about the overall quality of telecommunication services, and the value of the telecommunications services to which they subscribe. For example, "Overall, how would your company rate GTE in value received, defining value as the quality and quantity of services you receive for the money you spend? Would you say: excellent, good, average, below average or poor?" The survey also elicits ratings of recent service encounters -(i.e., within the past three months) and ratings of the service performance attributes that signal underlying service

quality dimensions. For example, the survey asks directly about repair service, sales representatives, reliability, and so forth. Most questions begin with "how would your company rate . . .?" and conclude with the same five point scale ("excellent . . . poor"). This consistent phraseology is necessary because the survey is administered over the telephone.

MODEL ESTIMATION AND RESULTS

Model Estimation

Assuming the service is at least minimally satisfactory on all attributes (as required by Public Utilities Commissions), the model is postulated to be linear additive. In this four equation system, BILLING, EASY-BUS and QUALITY appear as both dependent variables and predictor variables. The measurement errors in these equations are likely to be positively correlated because the dependent variables are related through questionnaire effects. Hence, a two-stage least squares estimation procedure was used (Johnston 1972).¹

Results

Separate models were estimated for the "voice only" and "voice and data" market segments. In general, the model is well supported by the data. The effects of most variables are in the direction hypothesized and statistically significant (one tailed tests, $p < 0.05$). The R^2 for the equations range from 0.46 to 0.64. The explanatory power of the business model is better than the results reported by Parasuraman, Zeithaml and Berry (1988) or Bolton and Drew (1991b). One possible explanation is that the assessment of service quality and value is a more meaningful task for decision makers in small businesses than for consumers. Table 1 shows the unstandardized regression coefficients, and the results of hypothesis tests.

Billing

The results for the BILLING service equation are almost identical for both market segments. A business customer rates billing service higher if he perceives the bills to be ACCURATE, and EASY to understand, and if he has not experienced a billing problem (NO-CONTACT) in the preceding three months. A problem results in a substantial "penalty" to a customer's rating of billing service. If the customer has experienced a billing problem, satisfaction with the billing representative (BILLREP) has a positive effect on billing service. However, it does not offset the aforementioned "penalty."

Easy to Do Business

The results for the EASY-BUS equation are very similar for both market segments. As hypothesized, EASY-BUS is positively affected by the customer's satisfaction with training concerning telecommunications products and services, maintenance service, emergency service, repair service, installation service, sales service, and billing service. The effects of these variables are positive (as hypothesized) and statistically significant, with the exception of NO-INSTALL in the "voice" market segment and MAINTAIN, INSTALL and NO-INSTALL in the "voice and data" market segment. Ranking the services in descending order according to the impact on the dependent variable, the most important facilitating services entail service encounters: sales and repair services. In addition, EASY-BUS depends on the customer's overall assessment of the RELIABILITY of these services.

Service Quality

For the "voice only" market segment, the primary determinants of a customer's assessment of overall quality are LOCAL, VOICE, TECH-LEADER, TRAINING, REPAIR, NO-REPAIR and RELIABILITY. Each variable has a positive, statistically significant effect. LOCAL and VOICE are the most important components. For the "voice and data" market segment, the primary determinants of overall quality are LOCAL, DATA, EMERGENCY, BILLING and RELIABILITY. LOCAL and RELIABILITY are the most important determinants. In contrast with prior research, customers do not consider whether telephone service has improved in the past three months in assessing overall quality. Business customer expectations may be formed by experiences with other services, rather than by past experiences with telephone services.

The most striking implication of these results is that small business customers do not weigh facilitating service encounters very heavily in their assessments of overall service quality. Although "voice only" customers are influenced by recent repair visits, both segments consider the continuing telephone services (LOCAL, VOICE/DATA, RELIABILITY) to be of primary importance. A second implication of these results is that "voice only" and "voice and data" customers differ in their assessments of overall service quality. "Voice & data" customers are particularly concerned with responsiveness to potential disruptions in service (EMERGENCY), whereas "voice only" customers are particularly concerned with the technological leadership and training (TECH-LEADER, TRAINING).

Service Value

Continuing services affect VALUE through their impact on QUALITY. Rather unexpectedly, EASY-BUS is as important as QUALITY in determining VALUE. Customers seem to be weighing their satisfaction with service encounters more heavily in determining service value than service quality. The results also indicate that small business customers' assessment of service value is affected by their perception of the company as a technological leader. "Voice only" customers are particularly concerned that the company exhibit technological leadership; whereas "voice & data" customers consider EASY-BUS as important, if not more important, than QUALITY. Similar to the quality equation, the business customer segments do not consider service improvement to be an important factor in assessing overall service value.

Intentions

In the survey, each respondent was asked the following question to elicit a measure of subscription intentions. "Based on your overall experience during the past three months, would you recommend GTE to someone at another business who has a choice between GTE and an alternate supplier? (Would/would not recommend)." The correlation between the business model's prediction of VALUE and the response to this question is 0.57 for the "voice only" segment and 0.61 for "voice and data" segment, whereas the correlation between the residential model's prediction of QUALITY and the response to this question is 0.57 for the "voice only" segment and 0.59 for the "voice and data" segment.

DISCUSSION

Since this study focuses on the impact of service encounters on customers' global assessments of a the service, it is useful to closely examine the coefficients of the service encounter variables. The coefficients of NO-REPAIR, NO-INSTALL, NO-SALES are all positive. In other words, customers that have had a recent service encounter have lower global assessments of service than those who have not. Thus, customers' regard service encounters as undesirable and "penalize" the service company in their ratings.

For the telephone company, repair encounters are associated with failure in certain continuously provided services. Similarly, installation encounters (in which services are added, changed or upgraded) may lead to disruptions in core services. Also, interactions with billing representative occur when the customer has a question or problem concerning his/her monthly bill. Hence, a penalty is

consistent with Bitner's (1990) observation that "when customers perceive the cause of service failure to be within the control of the firm and likely to occur again, they will be more dissatisfied than when opposite conditions hold" (p. 79). Since sales encounters should be associated with enhanced customer service, it is initially rather surprising that they are considered undesirable. However, small business customers are likely to view sales calls as disruptions in their normal business operations.

The "penalties" associated with service failures or disruptions are offset by the customer's satisfaction with the associated service encounter. For example, if a "voice only" customer has had a recent repair encounter, his/her EASY-BUS rating will be about 0.42 lower (i.e., the magnitude of the coefficient estimate NO-REPAIR). However, his/her EASY-BUS rating will also be about 0.11 higher (i.e., the magnitude of the REPAIR coefficient) for each increment in his repair encounter satisfaction rating. Thus, if he/she is very satisfied with the repair service encounter and rates it "excellent" (5), his/her EASY-BUS rating will be about 0.55 higher. In this example, the penalty (-0.42) is more than offset by the customer's satisfaction with the repair encounter (0.55), and the net effect on his/her EASY-BUS rating is positive (0.13). In contrast, if the customer considers the repair service encounter to be "average," the net effect on his/her EASY-BUS rating is negative (-0.09).

These calculations can be used to dramatically illustrate the impact of a service encounter satisfaction on customers' global assessments of a service. The horizontal bars in Figure 1 represent the "penalty" or average decrease in customers' ratings that is associated with a service encounter. The vertical lines indicate the extent to which customer satisfaction (excellent . . . poor) may or may not offset this penalty. It can be seen that customers must consider repair, installation and sales encounters to be "good" or "excellent" to offset the decrease in ratings.

--- Figure 1 here ---

Generally speaking, a "good" interaction with an employee is sufficient to offset the decrease in a customer's evaluation about how easy the company is to do business (i.e., the decrease arising from a service failure or disruption). However, an "excellent" interaction with a billing representative is required to offset the decrease in a customer's attitude about billing service that occurs when the customer must contact the company about his/her monthly bill. Note that this has an indirect effect (via BILLING) on his/her perceived service quality. Furthermore, although most service encounters

don't affect perceived service quality, an "excellent" interaction with a repair employee is required to counteract the penalty associated with a service failure for "voice only" customers.

Thus, these results show that it is possible to compensate for a service failure or disruption by providing a highly satisfactory service encounter. Since most service companies will have some customers that are not completely satisfied with their service encounter, it is important to avoid the service failures that precede such encounters. This observation suggests rules about "zero defects" or "Get it right the first time." Furthermore, as illustrated in Figure 1, the penalties are more difficult to offset for some types of service encounters than others. For example, only an excellent sales representative can offset the disruption associated with a sales call. Rules about the difficulty of countering negative service experiences arise from this observation.

CONCLUDING REMARKS

Bitner (1990) points out that "empirical research to substantiate . . . [the close relationship between service encounter satisfaction and perceived service quality] is lacking" (p. 80). This study provides empirical evidence that small business customers' assessments of telephone service quality and value depend on their satisfaction with service encounters. However, perceived service value is more heavily influenced by service encounters than perceived service quality. In quantifying the effect of sales calls, repair visits, billing contacts and so forth, we find that the impact of service encounters usually cannot compensate for service failures and disruptions.

Small business customers assess two key aspects of telephone service. The first aspect focuses on service encounters: "Is the company easy to do business with?" In this assessment, small business customers weigh their satisfaction with encounters that involve repair, installation and sales employees. The second aspect focuses on the overall quality of telecommunication services. Surprisingly, perceived service quality depends on satisfaction with encounters that do not involve interactions with service employees. The single exception is that a repair encounter -- associated with failure of a core service -- does affect perceived service quality for "voice only" customers. This pattern can be explained by the fact that interactions with the service provider that do not involve employees characterize the telephone company's continuously provided, core services -- and core

services play a larger role in customers' global assessments of service quality.

The role of service encounters highlights how small business customers distinguish between service quality and value. Both perceived service quality and value depend (directly or indirectly) on customers' satisfaction with core services that do not involve interactions with service employees. However, perceived service value also depends on satisfaction with service encounters that do involve interactions with service employees (via ease of doing business). The impact of a service encounter is very large, relative to other variables, and there is convincing evidence that only an "excellent" encounter enhances customers' perceived service value. For example, GTE executives were very disturbed to discover that unsatisfactory sales encounters were having a negative net effect on customers' global evaluations of GTE's service. They decided to re-examine how sales representatives were trained.

It is particularly striking to discover that customers regard some service encounters as undesirable and that "good" service may not mitigate this effect. Future research should investigate the impact of service encounter satisfaction on customers' global assessments of services in other industries, such as financial services, retailing, or transportation. It is important to examine on industries where the core services entail customer-employee interactions (e.g., retailing).

Table I
Service Encounter Model*

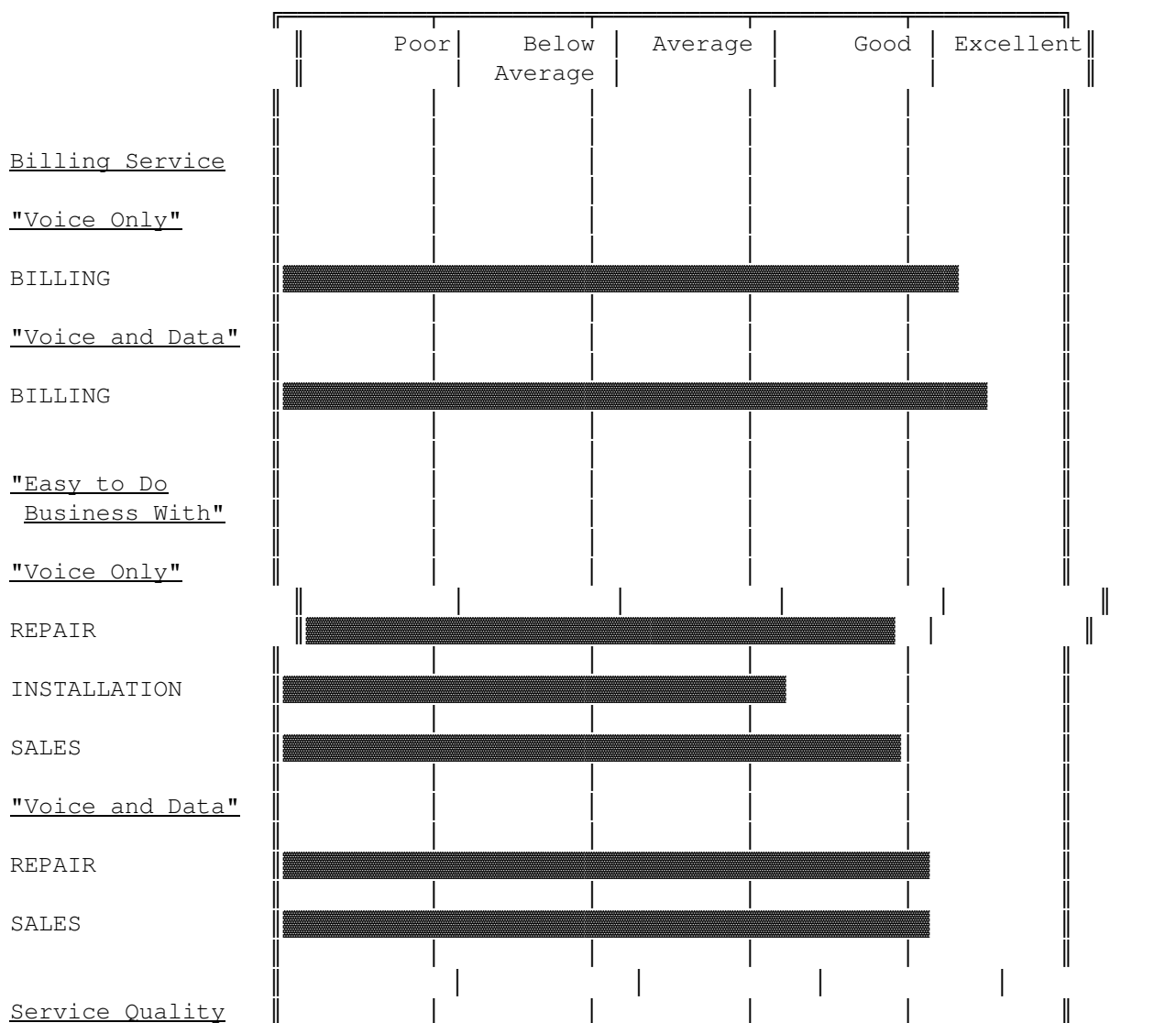
BILLING Equation: "Overall billing service [GTE] provides"			
Predictor Variable	Measure	Voice	Both
ACCURATE (+)	"Billing accuracy"	0.3063^a	0.3713^a
EASY (+)	"Easy to understand and work with"	0.4513^a	0.2555^a
NO-CONTACT (+)	No "contact with a billing representative in the past 3 months"	0.6137^a	1.5566^a
BILLREP (+)	"The attitude of the billing representative"	0.1435^a	0.3494^a
INTERCEPT		0.3633	-0.0209
R² / Adjusted R²		0.57^a/0.57	0.46^a/0.45
EASY-BUS Equation: GTE "as a company that is easy to do business with"			
Predictor Variable	Measure	Voice	Both
TRAINING (+)	"The quality and amount of training your company receives in utilizing products and services purchased"	0.2284^a	0.2771^a
MAINTAIN (+)	"Hours and days of maintenance or repair coverage"	0.1374^a	-0.0702
EMERGENCY (+)	"The response of GTE in emergency and urgent situations . . ."	0.0974^a	0.1711^a
REPAIR (+)	"Overall repair service"	0.1089^b	0.2110^b
NO-REPAIR (+)	Did not use repair service in the past 3 months	0.4159^c	0.8614^c
INSTALL (+)	"Overall installation service" ("adding, changing or rearranging equipment or service")	0.0878^c	0.0051
NO-INSTALL (+)	Did not use installation service in the past 3 months	0.2838	-0.0037
SALES (+)	The staff of sales people and sales representatives	0.1356^a	0.2724^b
NO-SALES (+)	Did not interact with a sales representative in the past 3 months	0.5422^a	1.0731^c
BILLING (+)	"Overall billing service"	0.3408^a	0.2639^a
RELIABILITY (+)	"Reliability of products and services you receive in terms of how frequently they fail to perform as expected"	0.1600^a	0.2217^a
INTERCEPT		-1.0864	-1.3590

R² / Adjusted R²		0.60^a/0.60	0.59^a/0.57
<p>* The sign in parentheses indicates the hypothesized positive (+) or negative (-) effect on the dependent variable. Quotation marks indicate actual question phrasing. Unless otherwise stated, all variables are coded on a five point scale (where 5 signifies excellent). If the respondent did not use a service in the past three months, the variable is coded zero. ^a p < 0.005 ^b p < 0.01 ^c p < 0.05</p>			
<p>QUALITY Equation: Overall "quality of voice and data communications services provided by the local telephone company"</p>			
Predictor Variable	Measure	Voice	Both
LOCAL (+)	"The service . . . on incoming and outgoing calls"	0.3443^a	0.2760^a
VOICE (+)	"Voice transmission or how well you caould hear and be heard without background noise"	0.2576^a	0.0964
DATA (+)	"Data transmission quality your company has received"	N.A.	0.1804^a
TECH-LEADER (+)	GTE "as a company that provides technological leadership"	0.0722^a	-0.0287
TRAINING (+)	As defined for the EASY-BUS equation	0.0625^c	0.0242
MAINTAIN (+)	As defined for the EASY-BUS equation	-0.0089	0.1156^a
EMERGENCY (+)	As defined for the EASY-BUS equation	0.0530	-0.0147
REPAIR (+)	As defined for the EASY-BUS equation	0.0824^a	0.0709
NO-REPAIR (+)	As defined for the EASY-BUS equation	0.3850^a	0.3089
INSTALL (+)	As defined for the EASY-BUS equation	-0.0375	0.1567
NO-INSTALL (+)	As defined for the EASY-BUS equation	-0.1361	0.7100
SALES (?)	As defined for the EASY-BUS equation	-0.0128	0.0214
NO-SALES (+)	As defined for the EASY-BUS equation	-0.1006	0.1228
BILLING (+)	As defined for the EASY-BUS equation	0.0245	-0.1679^a
RELIABILITY (+)	As defined for the EASY-BUS equation	0.0722^a	0.3116^a
IMPROVE (+)	Whether "the service provided to you by GTE over the past 3 months is better, worse or about the same as it was 3 months ago"	0.0868	0.0404
INTERCEPT		0.0547	-0.7624
R² / Adjusted R²		0.58^a/0.57	0.62^a/0.58
<p>VALUE Equation: "Value received, defining value as the quality and quantity of services</p>			

received for the money you spend"			
Predictor Variable	Measure	Voice	Both
QUALITY (+)	As defined for the QUALITY equation	0.4015*	0.3491*
EASY-BUS (+)	As defined for the EASY-BUS equation	0.3886*	0.4830*
TECH-LEADER (+)	As defined for the QUALITY equation	0.3133*	0.2114*
IMPROVE (+)	As defined for the QUALITY equation	-0.0451	-0.1975
INTERCEPT		-0.4536	0.2003
R² / Adjusted R²		0.64/0.64	0.61/0.60

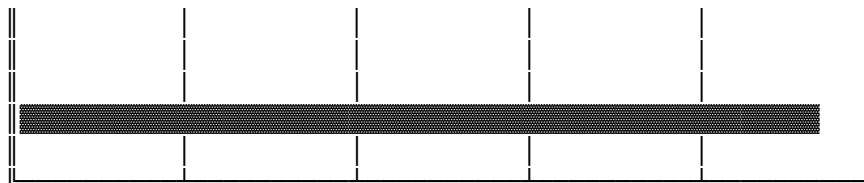
Figure 1

POTENTIAL PENALTY OF AN UNSATISFACTORY SERVICE ENCOUNTER*



"Voice Only"

REPAIR



* This figure displays results for those service encounter variables that were statistically significant ($p < 0.05$). The values represented by the horizontal bars are obtained directly from the coefficients of the relevant equations. For example, the repair "penalty" in the EASY-BUS equation is 0.4159 (i.e., the magnitude of the NO-REPAIR coefficient). A repair satisfaction rating of "poor" offsets this penalty by 0.1089 (i.e., the magnitude of the REPAIR coefficient).

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FOOTNOTES

i. The 2SLS procedure requires the assumption that the measurement scales of variables have interval properties. Relaxing this assumption, additional analyses were conducted that assumed the scales have ordinal properties. The same equations were estimated using binary logistic regression procedures, where both dependent and independent variables were treated as categorical variables. The logistic regression results were substantially the same as those obtained from the 2SLS procedure.