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## The Effect of Service Quality and Partnership on the Outsourcing of Information Systems Functions

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**ABSTRACT:** Numerous corporations today are outsourcing specific information systems (IS) functions. The diversity of these outsourcing arrangements goes well beyond that associated with the more traditional facilities management. This paper examines outsourcing trends and reports the results of an empirical study on IS outsourcing. Overall IS outsourcing and its five component functions—namely, applications development, systems operations, telecommunications, end-user support, and systems planning and management—are examined for their relationships with outsourcing success. The effect of service quality of the provider and the ability of companies to build a partnership on these relationships are hypothesized and studied. Data from senior executives in 188 companies are gathered. Outsourcing success is found to be highly related to the degree of outsourcing of two functions, systems operations and telecommunications. The results indicate that transaction cost theory provides a good framework for IS outsourcing and that asset specificity of outsourcing transactions needs to be considered in any decision to outsource. Also, both service quality of the vendor and elements of partnership such as trust, cooperation, and communication are important for outsourcing success. Implications of the study for research and practice are discussed.

**KEY WORDS AND PHRASES:** business partnership, information systems outsourcing, outsourcing success, service quality.

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IN RECENT YEARS, AN INCREASING AMOUNT OF ATTENTION HAS BEEN PAID to outsourcing of information systems (IS) functions in organizations. Loh and Venkatraman [44] define this outsourcing as “involving a significant use of resources—either technological and/or human resources—external to the organizational hierarchy in the management of the Information Technology (IT) infrastructure.” While IT outsourcing is not really a new phenomenon, since its roots can be traced to the traditional time sharing and professional services of the 1960s and 1970s, a recent survey of senior IS executives highlights it as one of the six strategic management issues confronting organizations in their management of corporate systems [17]. In fact, the outsourcing market is expected to jump from \$10 billion in 1991 to \$26.5 billion in 1997 [42].

The nature of outsourcing has evolved. Compared with the 1970s, current outsourcing practices differ in the following key ways [5, 58]:

1. *Larger companies are outsourcing.* While smaller companies have often turned to outsourcing as a way to obtain IS services that are not available or feasible internally [36], larger companies with mature IS departments (e.g., Kodak, American Standard) are also outsourcing their IS functions. Many larger companies are recognizing the separation of data ownership from data processing, acknowledge the technical sophistication of service providers, and concentrate their resources on efforts to produce high added value.
2. *A greater range and depth of services are being outsourced.* Applications packages, contract programming, and specific processing services comprised the major portion of all IS services outsourced in 1970s, while

telecommunications management, systems integration, application development, and systems operation are among the major IS services outsourced in the 1990s. Current outsourcing practices even reflect the outsourcing of critical activities, provided crucial relationships with customers can still be controlled by the outsourcing firm.

3. *There is more functional outsourcing.* While multimillion-dollar contracts pioneered by companies like Eastman Kodak and General Dynamics where all IS functions are outsourced are still prevalent, many companies are choosing the functions they wish to outsource. Loh and Venkatraman [44] argue that a simple dichotomy of “in-house function” versus “outsourcing” no longer captures the complexity inherent in managing IS functions.
4. *Service providers are accepting management responsibility and risk.* Outsourcing service providers formerly assumed no management responsibility, even when they took over a part of the business. Today, growing ranks of service providers are willing and eager to take on such responsibility [5]. In some cases significant risks are incurred by the service provider.
5. *The nature of the relationship with the service provider is changing.* The business relationship between the outsourcing service receiver and the service provider is increasingly that of a partnership rather than merely that of customer and vendor [57, 58]. Outsourcing is considered part of the broader context of “information partnership,” as described by Konsynski and McFarlan [37].

The above trends clearly indicate that the fundamental importance, nature, and diversity of IT outsourcing are changing, as companies begin to take a more strategic and proactive look at this phenomenon. As more and more vendors enter the outsourcing business and organizations battle to remain competitive and technologically competent, service quality and the nature of the client–vendor relationship are of fundamental importance. This paper presents an empirical study that examines outsourcing. Specifically, the effect of service quality (of the provider) and partnership (between the provider and the client) on functional outsourcing is studied. The objective of this line of research is to identify and understand the determinants of successful outsourcing for various IS functions.

The paper is organized in five major sections. First, some relevant theoretical perspectives are reviewed. This is followed by a description of the research model and hypotheses. The methodology is then described, followed by presentation of the results. The paper concludes with discussion of the implications for research and practice.

## General Background

IN THIS RESEARCH WE DEFINE BROADLY OUTSOURCING OF IS functions as *the practice of turning over part or all of an organization's IS functions to external service provider(s)*. This definition includes the following external services: applications

development and maintenance, systems operation, networks/telecommunications management, end-user computing support, systems planning and management, and purchase of application software, but excludes business consulting services, after-sale vendor services, and the lease of telephone lines. An organization can obtain these services through the following types of outsourcing: complete outsourcing, facilities management, systems integration, time sharing, and other contracts (including rental, installation and procurement, and maintenance and programming).

### Theoretical Perspectives

Two theoretical perspectives based on resource dependence and transaction cost economics provide insight into organizational motivation for outsourcing. Resource dependence theories view a firm as a collection of productive resources—that is, physical, human, and organizational capital [8]. To fully exploit a firm's existing stock of resources and capabilities in order to develop competitive advantage, the external acquisition of complementary resources and capabilities might be necessary. This external acquisition is known as “filling gaps” and should be done only after a thorough evaluation of existing resources and deficiencies [24, 64]. The firm can then enter into exchange relationships with other organizations in the environment [67]. With respect to IT outsourcing, companies can obtain specific human resources (e.g., skilled programming and telecommunication personnel) and technological resources (e.g., network infrastructure) by evaluating their needs and managing the relationship with an outside supplier. More important, resource dependence theory points to the acquisition of vendor resources to supplement in-house competencies, rather than total outsourcing. Therefore, this study attempts to examine components of IS outsourcing independently, thereby recognizing the contingent nature of outsourcing practice.

Transaction cost economics posits that there are costs in using a market. These costs include operational costs (e.g., search costs, inventory holding costs) and contractual costs (e.g., cost of writing and enforcing a contract) [27]. By making their own input factors (e.g., software), companies gain in economies of scale and do not incur transaction costs. This increased size, however, requires more internal coordination. Outsourcing increases transactional costs and a company may lose economies of scale. However, they could take advantage of the economies of scale and scope of an outside vendor, while reducing internal coordination costs [35]. This trend is reflected in IT outsourcing. Companies can take advantage of the many outsourcers that specialize in certain industries, technologies, and software.

It is also important to note that the costs associated with external coordination (in the case of outsourcing) might increase or decrease depending on certain factors. One factor referred to in the original transaction framework is asset specificity [70]. This refers to the uniqueness of the product or service being exchanged between two parties. High asset specificity arises when firms have products and services that are customized and therefore not readily transferable to alternative firms. For instance, a cost accounting system that accommodates the idiosyncrasies of the firm could be highly asset-specific. In such cases, outsourcing might lead to higher coordination costs to cope

with the unique application and vendors will not be able to develop effective economies of scale. As a consequence, outsourcing endeavors might not be successful, while in-house development (especially if leveraged by distinct resource competencies such as IS personnel skills) could be a source of competitive advantage. In contrast, more standardized products and services could reflect lower outsourcing costs due to coordination, and vendors could increase their economies of scale and scope. In this study, general distinctions in asset specificity between components of IS outsourcing can form the basis for evaluating outsourcing success.

The success of outsourcing can be assessed in terms of attainment of benefits. These can be described in three categories. First, *strategic benefits* [5, 43, 44, 58] refer to the ability of a firm to focus on its core business, outsource routine IT activities so that it can focus on strategic uses of IT, and enhance IT competence and expertise through contractual arrangements with an outsourcer. Second, *economic benefits* [3, 31, 43, 44, 58] refer to the ability of a firm to utilize expertise and economies of scale in human and technological resources of the service provider and to manage its cost structure through unambiguous contractual arrangements. Third, *technological benefits* [3, 16, 44] refer to the ability of a firm to gain access to leading-edge IT and to avoid the risk of technological obsolescence that results from dynamic changes in IT. These benefits need to be weighed against the increase in transactional costs, decrease in flexibility, and conflicting objectives of the outsourcer vis-à-vis the firm.

## Service Quality and Partnership

IT outsourcing is a service provided by an external vendor that could involve various facets of a firm's IT development, operations, and management. Marketing literature provides important insight into service evaluation and the nature of buyer-seller relationships. This literature has been reviewed so as to provide an understanding of the implementation of an organization's decision to outsource IS functions.

### Service Quality

Bowen and Schneither [13] indicate that services are fundamentally different from physical goods. Services tend to be intangible, involve simultaneous production and consumption, and integrally involve customers in their creation [41, 49, 54]. Shostack [61] emphasizes that services are not things; they are processes. For example, the manner in which a service is performed is an integral part of the service. Behaviors such as willingness to help and trustworthiness are considered in overall service quality evaluation. Because of these unique characteristics, it is more difficult to evaluate the quality of services than to evaluate goods. As noted by Schonberger [59], "measuring quality of intangible purchases is the central problem that makes purchasing intangibles a special challenge" (p. 25). Further, Levitt [41] notes that intangible products or services "can seldom be tried out, inspected, or tested in advance. Prospective buyers are generally forced to depend on surrogates to assess what they are likely to get" (p. 94). Therefore, when no tangible evidence exists to evaluate

service quality, users or potential users must depend on other cues or surrogates for quality.

Gronroos [25] contends that consumers compare expected service levels with perceptions of the service received to evaluate quality. Smith and Houston [63] also indicate that satisfaction with services is related to confirmation of expectations. Parasuraman, Berry, and Zeithaml [54] have researched this area extensively. They used focus-group interviews in 1985 to identify determinants of service quality. Their findings represent a comprehensive enumeration of consumer expectations in the dimensions of reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding, and tangibles.

Because of the imprecise nature of services and the difficulty in assuring consistent quality, service receivers often form ongoing relationships (e.g., partnerships) with service providers. The ongoing relationships are formed in an effort to specify service requirements and desired quality levels better.

#### Long-Term Interactive Relationships (Partnership)

Marketing emphasizes the process of buyer–seller interactions as a key feature of exchange. It is possible to model buyer–seller interactions along two principal dimensions—integrative and distributive [2, 18, 60]. Integrative interactions are characterized by cooperative behavior. Buyers and sellers seek ways to achieve mutual objectives while bargaining [56]. Distributive interactions demonstrate competitive behavior motivated by self-gain at the expense of the other party [60]. Firms demonstrating integrative behaviors are likely to achieve mutual goals. Thus, integrative interactions can form a base for long-term relationships.

The network/interaction theory of industrial marketing stresses supplier–customer interactive relationships. Gummesson [26] describes network/interaction theory as involving “all activities by the firm to build, maintain, and develop customer relations” (p. 12). The network/interaction theory emphasizes a long-term perspective for buyers and sellers to establish a smooth working relationship. McKenna [48] reiterates the need for building relationships, stating that it is necessary to “gain understanding of the market structure, then develop strategic relationships with other key companies and people in the markets. They must build relationships with suppliers and distributors, investors and customers. Change in the market can alter prices and technologies, but close relationships can last a lifetime, if not longer” (p. 68).

#### Research Model

THE OBJECTIVE OF THIS STUDY IS TO EXAMINE FIRMS THAT OUTSOURCE IT functions, their success, and certain variables that might influence this success. The basic model studies the relationship between IT outsourcing and its success. The effects of two variables discussed earlier, service quality and partnership, on this relationship are explored. The research model is illustrated in figure 1 and discussed below.

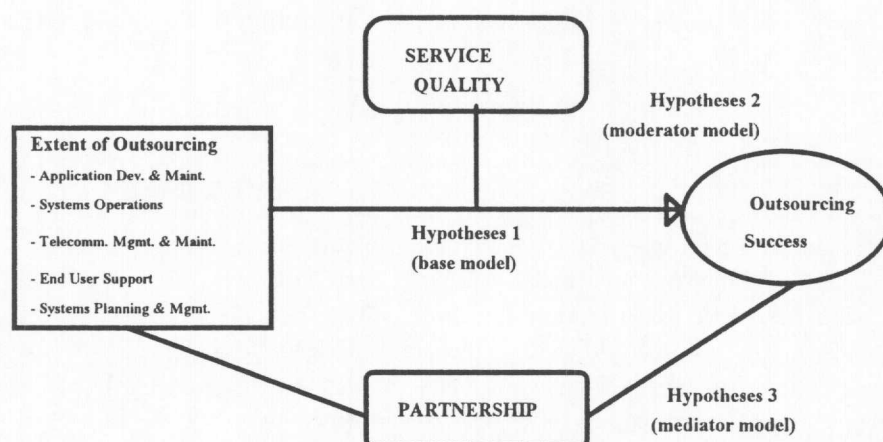


Figure 1. Research Model

As indicated by Loh and Venkatraman [44], outsourcing can no longer be considered a simple dichotomous decision. They indicate that a continuous measure (degree of outsourcing) is a superior conceptualization of the concept. Moreover, with the increasing trend toward outsourcing of specific IS functions, it is appropriate to examine the various components of outsourcing. Traditionally, IS functions have been classified into three categories: systems development, systems operations, and systems management [12, 52, 66]. In this study, two additional functions, telecommunications and end-user support, are added to reflect the more contemporary IS responsibilities. This yields five functions, all of which can potentially be outsourced, and have formed the basis of prior work [14, 46]. These are: *function 1*: applications development and maintenance; *function 2*: systems operations; *function 3*: telecommunications and networks management; *function 4*: end-user support; and *function 5*: systems planning and management. The degree of overall IT outsourcing and individual functional outsourcing is represented by the left box in figure 1.

The dependent variable, success of outsourcing, is defined as the satisfaction with benefits from outsourcing gained by an organization as a result of deploying an outsourcing strategy. Defining the dependent variable in this way is consistent with Mintzberg's conceptualization of realized strategy, which combines both intended as well as emergent strategies [50, 51].

The first set of hypotheses explores the base relationship between the extent of outsourcing and its success. This hypothesis is presented at a purely descriptive level, recognizing that any summative assessment of IS outsourcing reflects the component functions. Trade literature is replete with examples of successful outsourcing contracts. It would be expected that if outsourcing is undertaken with conscious economic, technological, or strategic considerations, as guided by resource dependence theory and transaction cost economics, the relationship between outsourcing and success would be positive and significant. This leads to hypothesis 1:

*Hypothesis 1: The degree of outsourcing will be positively related to outsourcing success.*

However, transaction cost economics posits that the relationships might vary based on the degree to which the product or service is asset-specific. While such assessment is dependent on the specific context being considered, it can be argued that certain IS functions are becoming increasingly standardized. Perhaps the most apparent such function is systems operations, which represents one of the earlier functions outsourced, is highly structured, and is commoditized. The second is the telecommunications/network management function, which reflects the trend toward standardization and standard configurations. It has been argued that such structured activities are “generically attractive” candidates for outsourcing [39, 47]. In contrast, applications development, end-user support, and systems planning are more closely tied to the needs of the firm and could be highly asset-specific. The five hypotheses proposed below reflect this distinction:

*Hypothesis 1a: The degree of outsourcing of applications development and maintenance will not be related to outsourcing success.*

*Hypothesis 1b: The degree of outsourcing of systems operations will be positively related to outsourcing success.*

*Hypothesis 1c: The degree of outsourcing of telecommunications and networks management will be positively related to outsourcing success.*

*Hypothesis 1d: The degree of outsourcing of end-user support will not be related to outsourcing success.*

*Hypothesis 1e: The degree of outsourcing of systems planning and management will not be related to outsourcing success.*

It is widely accepted that successful outcomes are unlikely when implementation is poor, regardless of how appropriate a strategic decision may be [45]. Further, outsourcing implementation involves the quality of both the service provider and partnership that we expect to be important in determining the outcome of outsourcing decision. Therefore, we expect these two variables to affect the base relationship between the degree of outsourcing and its success.

Service quality refers to the degree and direction of discrepancy between service receiver’s expectations and perceptions [55]. The smaller the discrepancy, the greater service the quality achieved. The quality of service provided is critical to the success of IT outsourcing and can be assumed to be independent of the outsourcing decision [69]. While the degree of outsourcing per se may or may not have a significant relationship with outsourcing success, it is proposed that this relationship will be stronger (moderated) under increased levels of service quality. This is hypothesized to hold true for each of the five IS functions.

*Hypothesis 2: The association between the degree of outsourcing and outsourcing success is moderated by the level of service quality.*



*Hypotheses 2a–e: The association between the degree of outsourcing for each IS function and outsourcing success is moderated by the level of service quality.*

Outsourcing strategy, as described by Konsynski and McFarlan [37], is also considered as part of four different kinds of “information partnerships.” Henderson [30] defines partnership as “working relationships that reflect a long-term commitment, a sense of mutual cooperation, shared risks and benefits, and other qualities consistent with concepts and theories of participatory decision making” (p. 8). Lasher, Ives, and Jarvenpaa [40] define partnership as “a cooperative relationship in which parties are equally responsible for the business success or failure of the project or product” (p. 551), and argue that partnerships between a firm’s information systems group and either its supplier (external partnership) or its internal customers (internal partnership) can play an important role in the effective acquisition and management of emerging information technologies. Further, partnership allows two organizations to achieve key organizational objectives and build competitive advantage in their respective industries. Thus, a good partnership with the outsourcing firm is proposed as the key to success in outsourcing strategy [28, 42, 53].

Therefore, we expect that any relationship between the extent of an organization’s outsourcing and its success will be affected by the quality of the partnership. However, since a partnership is mutually effected between two parties and within the control of the outsourcing firm, we expect the effect of partnership to be a mediating one. In other words, the relationship between degree of outsourcing and success is hypothesized to be due to a partnership (i.e., it is mediated by partnership). While hypotheses 2–2e provide some insight into when the relationship between outsourcing and success is strengthened, the following hypotheses suggest why the relationship exists:

*Hypothesis 3: The association between the degree of outsourcing and outsourcing success is mediated by the quality of partnership between the service provider and the firm.*

*Hypotheses 3a–e: The association between the degree of outsourcing for each IS function and outsourcing success is mediated by the quality of partnership between the service provider and the firm.*

## Method

GENERALIZABILITY, MANIPULATION OF RESEARCH VARIABLES, AND CONTEXT REALISM cannot all be maximized using any one method. The sample survey was adopted to maximize generalizability rather than contextual realism, the latter having already been achieved through earlier studies [3, 4, 14, 21, 34, 44, 58, 62]. Further, the relationships between variables can be statistically established with careful measurement and sample selection. The unit of analysis for this research is an organization, which may be a corporation, a business unit, a subsidiary, or a division served by an IS department.

## Measurement of Variables

*Outsourcing of IS functions*, the independent variable in the research model, refers to the difference between the current outsourcing budget and that of three years ago.<sup>1</sup> By using a differential measure, we can focus on the proliferation of contemporary outsourcing that occurred after Eastman Kodak and General Dynamics signed megacontracts rather than the older facilities management which was even prevalent in the 1970s [43].

The outsourcing budget in each case is expressed as a percentage of the firm's total IS budget for that year. A similar approach is used in a study by Loh and Venkatraman [44]. Budgets were assessed for the five IS functions: applications development and maintenance, systems operations, telecommunications and networks management, end-user support, and systems planning and management. Both the present and earlier outsourcing budgets are calculated as follows: the percentage of the total IS budget allocated for a function is multiplied by the percentage of that function's budget allocated for outsourcing. The sum for all five functions becomes the measure of the degree of outsourcing. Subtracting the sum of three years ago from the present sum yields the change in outsourcing budget (COB).

Success of outsourcing, the dependent variable in this research, refers to the overall organizational advantage gained from outsourcing strategy. To capture the tangible and intangible advantages of outsourcing, we use the concept of satisfaction, which has been increasingly perceived to be the best surrogate for capturing both cognitive and affective components of human actions [7, 10, 32]. Nine items assessing the degree to which service receivers are satisfied are constructed with respect to the three categories of benefits (strategic, technological, and economic) derived in the earlier review.

Considering the importance of *service quality* evaluation, we adopted the standardized and widely accepted instrument SERVQUAL for this research. The instrument was developed by Parasuraman, Zeithaml, and Berry [55] and has been adopted and validated by other researchers (e.g., [11, 15]). Two of the five dimensions of this instrument that seem particularly relevant to outsourcing practice—tangibles (physical facilities) and reliability (ability to perform service dependably and accurately)—are adapted. These two dimensions are representative of the service quality construct for purposes of this study. For each of these, the service quality is determined by the sum of the difference between perceived and expected scores for each item. The difference score method for this instrument has been subject to extensive testing and has been found to be a reliable and valid way to measure service quality [55].

Henderson [30] defines two dimensions of partnership-style relationships: partnership in context and partnership in action. The former is defined as "the degree to which the partners believe that the partnership will be sustained over time" [p. 8]. The latter is "the ability of the partners to influence policies and decisions that affect the operational performance of the partnership" [p. 8]. Anderson and Narus [1] present and assess empirically a model of working partnerships between distributor firms and manufacturing firms. They consider the following dimen-

sions that underlie the process of working together within a partnership from the manufacturer firm perspective: outcomes given comparison level, communication, trust, cooperation, conflict, relative dependence, influence over partner firm, influence by partner firm, and satisfaction. Four of these dimensions (communication, trust, cooperation, and satisfaction) are adopted for this research, because of their relevance to outsourcing practice. Items used for individual constructs are shown in appendix A.

### Instrument Administration

To maximize the response rate of the mail survey, the steps suggested by researchers [20, 65] were followed. These included careful design and pilot testing of the instrument; careful wording of the cover letter (which included a precise definition of IT outsourcing); addressing respondents by name; immediate follow-up on undelivered questionnaires by calling companies for correct addresses or names; follow-up mailing three weeks after the first mailing. Six staff members in the college's division of information resources and seven senior IS executives were administered the instrument (pretest) through personal interview. Modification to the instrument was made iteratively after each interview.

### Sample

Data were collected from IS top executives in randomly selected industries. These executives were assumed to be in the best position to have a holistic view of all IS functions and their outsourcing. Since there is evidence that in the context of research on outsourcing, control variables such as industry type and organizational size do not affect outsourcing strategy [19, 44], this research does not adopt any of these constraints in selecting samples. The survey questionnaire was mailed to 1,000 top IS executives obtained from the *Directory of Top Computer Executives* published by Applied Computer Research, Inc. A follow-up questionnaire was mailed to those who had not responded about three weeks later.

## Results

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### Response

AFTER THE TWO ROUNDS OF SOLICITATION, 193 responses were received, representing a response rate of about 19 percent. Of these, 188 could be used for analyses. Babbie [6] suggests that "a demonstrated lack of response bias is far more important than a high response rate" [p. 165]. Based on guidelines suggested in the literature [20, 23], the respondents and randomly selected nonrespondents were compared with regard to two key organization features: company total sales and number of employees. Table 1 shows the result of *t*-tests, indicating no significant differences between the two groups at the significance level of 0.05.

Table 1. The Result of T-Tests for Nonresponse Bias

	Mean for respondents	Mean for nonrespondents	<i>t</i> -test significance
Total sales (\$ billion)	3.1	3.5	NS <sup>a</sup>
	3.3	3.5	NS <sup>b</sup>
	2.2	3.5	$p < 0.10^c$
	3.3	2.2	ND <sup>d</sup>
Number of employees	12,383	13,819	NS <sup>a</sup>
	13,199	13,819	NS <sup>b</sup>
	11,297	13,819	NS <sup>c</sup>
	13,199	11,298	NS <sup>d</sup>

<sup>a</sup> Total returns versus randomly selected nonrespondents; <sup>b</sup> first returns versus randomly selected nonrespondents; <sup>c</sup> second returns versus randomly selected nonrespondents; <sup>d</sup> first returns versus second returns.

The industry representation of respondent companies, as shown in Table 2, indicates that a large proportion of these companies are manufacturers or are involved in banking, insurance, health care, and utilities. The responding companies represent a wide variation in size (sales and employees). The IS departments in these companies exhibit similar variation. Seventy-five of 166 companies have IS budgets that are equivalent to 3 percent or more of total sales and 113 of 178 companies have 50 or more IS employees.

### Reliability and Validity of Constructs

Content validity of the survey instrument was established through the adoption of standard instruments, suggestions in the literature, and pretesting with experts in the IS field [33]. Further results of reliability and validity analysis of the constructs are shown in Table 3. Internal consistency, as measured by Cronbach's alpha for all the constructs, ranges from 0.889 to 0.969. Convergent validity is evaluated by measuring the correlation of each item representing the construct with the aggregate measure for that construct less the focal item [32, 33]. This approach assumes that the total score is valid; thus, the extent to which the item correlates with the total score is indicative of construct validity for the item. Table 3 shows the correlations for each of research variables. All of the correlations are positive and significant at the 0.001 level. Discriminant validity is the degree to which a construct differs from other constructs and is usually verified through factor analysis [33]. Factor analyses for discriminant validity were performed with respect to each domain of the research model. In each case, discriminant validity was confirmed when items for each variable load onto single factors with loadings of greater than 0.50 [29].

The change in degree of outsourcing required estimates of the budgetary proportion of each IS function outsourced currently and three years ago, along with the proportion of the total IS budget allocated to each function. The results indicate that firms vary

Table 2. Profile of the Responding Companies

(a) Industry		
Industry	Frequency	Percent
Manufacturing	39	20.7
Banking/finance	26	13.8
Insurance	26	13.8
Health care	23	12.2
Utilities/energy	20	10.6
Retail/wholesale	12	6.4
Transportation	9	4.8
Other	33	17.7
<i>Total</i>	188	100.0

(b) Sales revenue		
Range	Frequency	Percent
Less than \$50 million	12	6.4
\$50 million to below \$100 million	11	5.9
\$100 million to below \$500 million	55	29.3
\$500 million to below \$1 billion	26	13.8
\$1 billion to below \$5 billion	33	17.6
\$5 billion to below \$10 billion	17	9.0
\$10 billion and above	13	6.9
Unanswered	21	11.2
<i>Total</i>	188	100.0

(c) IS budget as percentage of total sales		
Range	Frequency	Percent
Less than 0.5%	14	7.4
0.5% to below 1%	15	8.0
1% to below 2%	62	33.0
2% to below 3%	32	17.0
3% to below 5%	19	10.1
5% to below 15%	17	9.0
15% and above	7	3.7
Unanswered	22	11.7
<i>Total</i>	188	100.0

(d) Number of IS employees		
Range	Frequency	Percent
Less than 10	7	3.7
10 to below 20	18	9.6
20 to below 50	40	21.3
50 to below 100	36	19.1
100 to below 300	32	17.0
300 to below 1,000	27	14.4
1,000 and above	18	9.6
Unanswered	10	5.3
<i>Total</i>	188	100.0

Table 3. Reliability and Validity Analysis for Measures

Construct	Reliability (Cronbach's alpha)	Convergent validity (correlation of item with total score-item)	Discriminant validity (factor loading*)
<b>Service quality (gap)</b>			
<i>Tangibles</i>	0.889		
Up-to-date equipment		0.859	0.916
Appealing physical facilities		0.867	0.956
Well-dressed employees		0.714	0.716
Keeping with services		0.633	0.612
<i>Reliability</i>	0.951		
Promised services		0.910	0.934
Sympathy and reassurance		0.856	0.858
Dependability		0.885	0.896
Promised service time		0.918	0.923
Keeping records accurately		0.794	0.780
<b>Partnership</b>	0.969		
Communication		0.865	0.876
Trust		0.942	0.964
Cooperation		0.941	0.962
Satisfaction		0.940	0.962
<b>Outsourcing success</b>	0.908		
Focus on core business		0.589	0.623
IT competence		0.715	0.742
Skilled personnel		0.631	0.674
Economies of scale in human resources		0.796	0.849
Economies of scale in technological resources		0.817	0.871
Control of IS expenses		0.653	0.687
Avoidance of obsolescence risk		0.732	0.764
Access to key IT		0.728	0.764

\* Items for each construct loaded onto single factors.

in the degree to which they outsource a number of IS functions. This suggests that firms are making choices among outsourcing options, possibly based on competency gaps as suggested by resource dependency theory, rather than resorting to the "Kodak effect," or total outsourcing. The average change in overall and functional outsourcing was computed as described earlier. On average, 13.6 percent more of the IS budget is being outsourced, as compared with three years ago. The biggest component of this change was systems operations (5 percent), followed by applications development (4.1 percent), telecommunications (2.4 percent), end-user support (2.1 percent), and systems management (0.07 percent). To evaluate the validity of these measures, an overall estimate of the proportion of IS budget allocated for outsourcing currently and three years ago was also captured. The correlations between the computed measure for

overall outsourcing and the estimated measure were 0.86 (current), 0.89 (gap) and 0.90 (three years ago). These are all significant at the  $p < 0.01$  level.

### Testing the Base Relationship

The base relationship between the degree of outsourcing of each IS function and the success of outsourcing is illustrated in the first row of Table 4. As proposed in hypotheses 1b and 1c, outsourcing of two IS functions, systems operations (H1b) and telecommunications (H1c), shows strong positive relationships with outsourcing success. This suggests that, in general, the greater the outsourcing of these functions, the greater the achievement of strategic, technological, and economic benefits of outsourcing. Also, overall outsourcing of IS functions shows a significant positive relationship with success. Further, as predicted by transaction cost theory, outsourcing of more asset-specific interactions like applications development (H1a), end-user support (H1d), and systems management (H1e) do not lead to increased satisfaction, raising questions as to the appropriateness of outsourcing these functions.

### Testing the Moderating Effect of Service Quality

To examine the impact of service quality as a moderator of this base relationship (hypotheses set 2), we need to examine whether any change in the base relationship is significant under varying values of the moderator variable. For a variable to be a moderator, it is desirable that the variable be uncorrelated with the predictor (independent) variable [9]. In other words, service quality should not vary systematically with outsourcing of various IS functions. The second row of Table 4 demonstrates that this condition is upheld, (i.e., service quality has no significant relationship with the extent of outsourcing of any IS function or overall outsourcing). For a moderator model to be valid, the interaction between the independent variable and the moderator must be significant in a regression of the independent variables on the dependent variable [9]. Thus, the moderator effect would be valid if the interaction between the independent variable (outsourcing of IS functions) and the moderator (service quality) were significant in the following regression equation:

$$\text{Success} = f(\text{Outsourcing of IS functions, service quality, interaction between outsourcing and service quality}).$$

The results of the twelve regressions are described in Table 5. In each row of the table, the first line shows the results of a regression run with no interaction. This was followed by running a full model with the interaction term. The significance of the interaction term (equivalent to the difference in  $R^2$ ) tests for the moderating effect of service quality.

In each case, service quality significantly increased the amount of variance explained over the base correlations in Table 4.<sup>2</sup> Two IS functions, end-user support (H2d) and systems planning/management (H2e), show a significant moderating effect of service quality with the interaction term accounting for 32 percent and 17 percent, respectively, of the explained variance. However, the effect is negative in the case of

Table 4. Correlation Matrix

	Outsourcing of applications development & maintenance (ADM)	Outsourcing of systems operations (SOP)	Outsourcing of telecommunications management & maintenance (TMM)	Outsourcing of end-user support (EUS)	Outsourcing of systems planning & management (SPM)	Overall outsourcing (overall)
Outsourcing success	0.18	0.31**	0.31**	-0.04	-0.05	0.35**
Service quality	-0.04	0.09	0.05	-0.23	0.11	0.02
Partnership	0.09	0.27*	0.13	-0.11	-0.02	0.23*

\*\*  $p < 0.05$ ; \*  $p < 0.10$ .

applications development. The cases of telecommunications and systems operations (which had strong base relationships) showed no change in  $R^2$  with the addition of the interaction term. This suggests that the effect of service quality in the case of these two functions (H2b,c), along with applications development (H2a), is direct rather than moderated, as in the case of the other two.

### Testing the Mediating Effects of Partnership

Baron and Kenny [9] state four requirements for a mediational model to be valid: (a) the independent variable must be significantly correlated to the mediator variable, (b) the independent variable must affect the dependent variable in a regression of the independent variables on the dependent variable, (c) the mediator variable must affect the dependent variable, in a regression of both the independent variable and the mediator on the dependent variable, and (d) the effect of the independent variable on the dependent variable in (c) must be less than in (b).

On observation of Table 4, only two correlations between outsourcing and partnership (mediating variable) are significant. These are between systems operations and overall outsourcing and partnership. As per condition (a) above, only these two can be potential mediating models. Conditions (b), (c), and (d) are tested for these two models and the results presented in Table 6. Both models show strong mediating effects of partnership (H3 and H3b) since all three conditions are satisfied. In fact, the case of systems operations provides the strongest evidence for the mediating effect of partnership as it eliminates the significant base relationship between outsourcing and success.

The correlation between partnership and outsourcing success is very high (and significant) at 0.63. The strength of this association is important and indicates a very strong direct impact of partnership on success for the case of all IS functions. In the



Table 5. Testing for Moderating Effects of Service Quality

	Beta (interac- tion)	<i>p</i> (interac- tion)	<i>R</i> <sup>2</sup> (model)	<i>p</i> (model)	$\Delta R^2$
Applications development & maintenance (ADM) Main (ADM, SERVQUAL)			0.34	0.000	
+ Interaction (ADM X SERVQUAL)	-3.07	0.018	0.40	0.000	0.06
Systems operations (SOP) Main (SOP, SERVQUAL)			0.37	0.000	
+ Interaction (SOP X SERVQUAL)	-0.69	0.677	0.37	0.000	0.00
Telecommunications management & maintenance (TMM) Main (TMM, SERVQUAL)			0.36	0.000	
+ Interaction (TMM X SERVQUAL)	-1.18	0.576	0.37	0.000	0.01
End-user support (EUS) Main (EUS, SERVQUAL)			0.33	0.000	
+ Interaction (EUS X SERVQUAL)	9.58	0.000	0.49	0.000	0.16
Systems planning & management (SPM) Main (SPM, SERVQUAL)			0.34	0.000	
+ Interaction (SPM X SERVQUAL)	20.46	0.007	0.41	0.000	0.07
Overall outsourcing (OVERALL) Main (OVERALL, SERVQUAL)		0.38	0.000		
+ Interaction (OVERALL X SERVQUAL)	0.17	0.789	0.38	0.000	0.00

case of systems operations, however, partnership explains the significant relationship between its outsourcing and success.

Table 7 summarizes the results of the study. These results and their implications are discussed below.

## Discussion

ON AVERAGE, THE RESULTS INDICATE THAT IT OUTSOURCING IS POSITIVELY RELATED to the degree of attainment of benefits. However, the functional components of this relationship suggest that this base relationship is only true for outsourcing of systems operations and telecommunications. One fairly evident and important finding from this study is the need for firms to go much further than a transient buyer–seller association in order to achieve strategic, economic, and technological benefits from IT outsourcing. The ability of the provider to provide service quality beyond expectations has a significant direct

Table 6. Test for the Mediating Effect of Partnership (Regression of Outsourcing on Success with and without Partnership)

	Without partnership	With partnership	Difference in $R^2$ and beta
<b>Systems operations (SOP)</b>			
$R^2$	0.09	0.43	0.34
F value	6.83	24.88	
(p value)	(0.011)	(0.000)	
Beta coefficients (p value)			
Outsourcing SOP	20.34	8.79	-11.55
	(0.011)	(0.179)	
Partnership		0.88	
		(0.000)	
<b>Overall outsourcing (OVERALL)</b>			
$R^2$	0.12	0.45	0.33
F value	8.93	27.09	
(p value)	(0.004)		
Beta coefficients (p value)			
OVERALL	15.33	8.82	-6.51
	(0.004)	(0.040)	
Partnership		0.87	
		(0.000)	

impact on benefit attainment as evidenced by the significant variance explained by service quality in each regression (see Table 5). The service provider needs to bring more to the table than a generic ability to run data processing. Both the quality of visible facilities and deliverables, and the reliability of service are increasingly important, especially as the outsourcing market becomes intensely competitive. In other words, both parties benefit from an outsourcer who provides high-quality, value-added IS services and has the best interests of the customer in mind.

The strong relationship between partnership and outsourcing success (correlation = 0.63) indicates that fostering a long-term interactive relationship based on trust, communication, satisfaction, and cooperation is critical to achieving the greatest benefits from outsourcing. While the importance of partnership confirms some of the observations being made in the trade literature (e.g., [28, 30, 42]), some studies indicate that the viability of partnership has been overstated [38, 69].

While the importance of service quality and partnership was strong, these variables had a differentiated impact on the outsourcing of various IS functions (see Table 7). This is discussed below.

### Applications Development and Maintenance

Application development and maintenance (ADM) includes systems analysis, design, and construction of application software and the accompanying software maintenance.

Table 7. Summary of Results

	Base relationship with outsourcing success (hypotheses set 1)	Effect of service quality (hypotheses set 2)	Effect of partnership (hypotheses set 3)
Applications development & maintenance	Not supported (no base relationship)	Direct	Direct
Systems operations	Supported	Direct	Mediating
Telecommunications management & maintenance	Supported	Direct	Direct
End-user support	Not supported (no base relationship)	Moderating	Direct
Systems planning & management	Not supported (no base relationship)	Moderating	Direct
Overall outsourcing	Supported	Direct	Mediating

The outsourcing of this set of services does not show a significant base relationship with outsourcing success. This indicates that companies doing more ADM outsourcing do not perceive commensurate strategic, technological, and economic benefits. As discussed earlier, the asset-specific nature of many application projects can increase coordination costs significantly, reduce economies of scale and scope for the vendor, and thereby make it difficult to realize the strategic, economic, and technological benefits of outsourcing. Further, the difficulty in directly assessing benefits in lieu of the proliferation of inexpensive tools (CASE) and methods (prototyping) that reduce production costs and facilitate in-house development contribute to the lack of a significant relationship.

Also, companies might not actually realize the extent of benefits desirable due to inability of the service providers to adequately develop systems tailored to the industry and to the firm. This argument is supported by observing the mean value of the service quality construct for each IS function. The average value of service quality for all companies doing ADM outsourcing was the lowest of all IS functions. This indicates that, on average, ADM service providers were not achieving expectations on quality of facilities and reliability of service. It should be recognized that ADM could involve a variety of applications ranging from the more generic (e.g., payroll) to the more unique (e.g., new information product). While this study did not distinguish between the two, it is possible that with the increasing environmental dynamism, volume of computer-dependent products, and demands of internal users, ADM is fraught with uncertainty, making it difficult to be satisfactorily handled by an external service provider. However, improved service quality and fostering of a partnership at the outset of the relationship could have a significant positive impact on the success of this type of outsourcing.

## Systems Operations

Systems operations (SOP) include mainframe and minicomputer operations for daily processing runs, backup and recovery, and systems software maintenance. This function has been outsourced the longest under earlier “facilities management” types of arrangements. Our results indicate that SOP is one of the most extensively outsourced IS functions and this outsourcing is strongly related to success. Numerous companies turn over part or all of their systems operations to an outsourcing provider to save money and focus on their core competencies. They seem to be accomplishing this successfully with a presumably mature cadre of SOP service providers. Quality of service is a direct predictor of success in this case.

However, the results on controlling partnership indicate that the relationship between SOP outsourcing and success is insignificant. This suggests that, to be successful, outsourcing of SOP must lead to a partnership type of relationship. Such a relationship is, in this study, posited to be the reason for the relationship between SOP outsourcing and success.

SOP activities are fundamentally different from those of other IS functions. In many organizations, IS plays an operationally critical role and these day-to-day activities put the business “on-line” and must be accomplished carefully. Trust, communication, satisfaction, and cooperation then become essential characteristics of the relationship between service provider and receiver in order to successfully conduct management and operational idiosyncrasies. Also, systems operations represent the core of the IS profession. To entrust this to an external entity requires a degree of partnership. Often, outsourcing partnerships can only be forged after years of working relationships. SOP service providers are among the better established in the industry and their relationships are more mature.

## Telecommunications Management and Maintenance

Telecommunications management and maintenance (TMM) includes hardware and software development for telecommunications, daily management of voice, video, data, and/or image communications, and network operations and maintenance. With the proliferation of networks, and the shortage of specialists in this fast-growing category of technology, outsourcing is becoming more commonplace. A recent survey conducted by the Yankee Group indicates that this indeed is occurring, with one-fifth of the top IT spenders outsourcing all of their networks. With the increasing degree of specialization required in telecommunications, the proliferation of technologies and services, and the high bandwidths of existing network infrastructures, it often makes little sense to develop facilities and expertise in-house. This is increasingly true, given the large volume of standardized solutions that can be “packaged” by the growing number of vendors. As expected, our results indicate a strong relationship between TMM outsourcing and success. Whereas in the case of SOP, this relationship cannot be consummated without partnership, here it can. While partnership and service quality are both desirable to directly increase success, companies that outsource more

TMM are achieving strategic, economic, and technological benefits. With improvement in the diversity of common carrier services, global networking, the increasing need for flexible network solutions and rapidly changing technology in this area, TMM outsourcing might become a necessary option for all organizations.

### End-User Support

End-user support (EUS) includes PC procurement, user education and training, and user consulting. Outsourcing of these tasks is not related to success. While ADM, SOP, and TMM might be viewed as core IS services, EUS is often seen as a necessary “chore” by the IS department and any outsourcing might be motivated by the desire to “eliminate an internal irritant” [47]. Further, these activities usually must be done well to placate an increasingly computer-literate group of users, many of whom are involved in function- and business-specific tasks. Therefore, the positive moderating effect of service quality might be reflective of the recognition within the IS group of the importance of good service to enhance the relationship between EUS outsourcing and success. As with most IS functions, this study, while questioning the appropriateness of outsourcing organization-specific functions, also indicates that establishing a partnership with the support provider at the outset increases the chances of success.

### Systems Planning and Management

Systems planning and management (SPM) includes highly asset-specific activities such as project management, personnel management, financial management, and administrative support. Here again, as with EUC, service quality is critical because these activities involve the administrative infrastructure that facilitates the line function of the IS department. While the base relationship is not significant, it can be enhanced significantly through the reliability of service. It should be noted that the increase in explained variance through service quality is greatest in the cases of EUS and SPM, which tend to involve “unstructured” activities unique to individual firms.

### Overall Outsourcing

Overall outsourcing reflects an averaging effect of the results described above (weighted by the proportion of each function outsourced). However, within the context of the current sample, overall outsourcing showed a positive relationship with success. This indicates that, on average, outsourcing does realize benefits for the service receiver. The effect of service quality, on average, is direct rather than moderating. In other words, service quality of the provider (as compared to expectations) relates to outsourcing success. Both service quality and extent of outsourcing explain 38 percent of the variance in success (see Table 5).

Finally, partnership is an important variable for outsourcing. On average, it mediates the relationship between outsourcing and success. The relationship, however, is only partially mediated (i.e., reduced in strength). This suggests that, in general, while

outsourcing can lead to a partnership that fosters success, it might be important to try to cultivate a partnership with a service provider at the outset of the relationship.

## Limitations and Conclusions

IT SHOULD BE RECOGNIZED THAT THE DEPENDENT VARIABLE in the research model focuses only on benefits from outsourcing of IS functions. The research does not investigate drawbacks from outsourcing. The pure success of outsourcing may depend upon both benefits and drawbacks. Further, the success dimension has not been operationalized in the literature and so the measures used for this dimension are preliminary. More important, we should note that the study, while recognizing the functional components of IS outsourcing, has limited granularity. For instance, ADM could be comprised of a range of applications that vary in their asset specificity from the more strategic applications to the more generic. Findings reflect an averaging effect that might require refinement in future study. Further, results should be interpreted in light of the selected measures of service quality and partnership. A broader adaptation of these measures from their original source could yield different results. Also, even though every effort was made to design a questionnaire that would reduce response bias, such bias cannot be avoided entirely due to single (albeit senior) respondents from each company and the post hoc nature of research.

The findings of this study provide insight into the nature of IS outsourcing arrangements and relationships. Three broad implications emerge. First, the notion of IS outsourcing needs to be examined in terms of its components. Rational organizations, following resource-dependence perspectives, might choose to outsource certain components or functions rather than resort to comprehensive arrangements. Second, the theoretical premise of transaction cost theory is supported in this study. In other words, asset specificity of outsourcing transactions needs to be considered in any decision to outsource. And, finally, service quality and partnership are both relevant and important in this study. Vendors and organizations enhance their chances of success by increasing service quality, particularly in the case of asset-specific transactions such as end-user support and systems planning and management.

Interpretations for partnership, however, are not as straightforward. While the results suggest the partnership is good and either enhances the chance of success or explains it, as in the case of systems operations, these findings should be viewed in light of recent research. For instance, Lacity and Hirschheim [38] indicate that partnerships should not characterize the relationship between an outsourcing vendor and its customer because the profit motive is not shared. They go on to suggest that such views might force organizations to sign loose agreements leading to opportunistic behavior on the part of the vendor. Fitzgerald and Willcocks [22] also suggest that partnership based on risks and rewards might only be appropriate under conditions of high uncertainty, when flexible contracts and a good working relationship become important. Willcocks [69] discusses the difficulty in maintaining partnerships, which are often compromised due to asymmetrical resources and dependence and power relationships that develop in favor of the vendor. This study finds support for the

relationship between the presence of elements of partnership, namely, trust, communication, satisfaction, and cooperation, and the perceived achievement of benefits. In other words, the strong presence of these elements is good and fosters good working relationships. It is important to recognize, however, that such elements might be difficult to build and sustain, and that tight contractual relationships might be required under certain conditions. Since this study did not examine contractual aspects of relationships, the findings on partnership should be viewed cautiously, simply in terms of the presence of these elements.

For practitioners, the results indicate that both *service quality* and the establishment of *elements of partnership* are important determinants of outsourcing success. Service receivers have guidelines for selecting qualified service providers, while service providers also have guidelines for understanding and responding to their customer expectations in order to provide superior service. The importance of service quality might be more important to success under expanding outsourcing arrangements in the case of asset-specific and service-oriented products. Further, strategic alliance through partnership might provide management with more consistent service quality [28, 53]. As the repertoire of services provided and received expands, corporations need to build relationships that allow for flexibility in a dynamic and often unpredictable technological environment. Under such conditions, relationships can be established based on characteristics of partnership, including trust, cooperation, and communication. These characteristics, along with characteristics of service quality, represent criteria on which firms can select service providers. In practice, however, as discussed above, this may not be simple. Eastman Kodak's "strategic partnerships" with IBM, Businessland, and DEC may be the exception rather than the rule, suggesting the importance of hard contractual relationships, given the divergence of profit motives [38].

The study also brings attention to IS functional outsourcing, a trend that is becoming increasingly prevalent. Outsourcing success is found to be highly related to changes in the degree of outsourcing of both systems operation and telecommunication management and maintenance. It is suggested that these two functions are more structured than the other three and therefore more akin to traditional outsourcing of generic services, which are more readily transferable across organizations. By implementing practices that users often resist, such as software standardization, automation, and consolidation of operations, vendors might achieve significant cost reduction. These benefits are often viewed favorably by executive and IS management. However, it should be noted that the importance of service quality (direct or moderated) to all five IS functions indicates that service providers can effectively differentiate their products and create benefits for both parties involved. The results indicate that this differentiation can be exceptionally strong for the relatively unstructured activities involved in end-user support and systems planning. Also, a significant finding is the importance of partnership to the outsourcing of systems operations. While telecommunications outsourcing might be related to success because of its newness, perceived importance, lack of in-house expertise, and availability of large common carrier services, the management of operations outsourcing might be more successful if attention is devoted to productive team communication, reliable team trust, and cooperative relationships.

Future research can extend this study on outsourcing to include specific and additional factors, derived from frameworks based on resource-based theory, resource-dependence theory, transaction costs theory, and agency theory, all of which can be used for understanding the growing trend toward IS outsourcing. Outsourcing success can be contingent on a myriad of factors, including environmental uncertainty, risk-taking propensity of the firm, technological substitutability, IS maturity, strategic orientation, corporate philosophy, and others. Studies that examine such variables can facilitate development of a theory of IS outsourcing.

## NOTES

1. Three years is an appropriate gap. Three years prior to the study, Kodak outsourced a data center operation to IBM; after this contract, outsourcing, for many companies, emerged as one of the top ten issues for success (or survival) in the 1990s. Also, a recent survey by the Yankee Group, Inc., found a radical change in the attitudes toward outsourcing among CIOs, from almost 70 percent opposed to it three years ago compared with only 32 percent opposed today. Diffusion of outsourcing after the Kodak contract became more pronounced [42]. Further, it is reasonable for respondents to recall the outsourcing strategy they considered three years ago.
2. This increase can be observed by comparing the square of the base correlation in Table 4 for each function with the variance explained in the first regression for each function in Table 5. In all cases, SERVQUAL significantly increases the explained variance.

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## APPENDIX A: Questionnaire Items

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*[actual items were interdispersed in questionnaire]*

1 = Strongly Disagree; 2 = Disagree; 3 = Somewhat Disagree; 4 = Neutral; 5 = Somewhat Agree; 6 = Agree; 7 = Strongly Agree.

### Items Measuring Success of Outsourcing

- We have been able to refocus on core business.
- We have enhanced our IT competence.
- We have increased access to skilled personnel.
- We have enhanced economies of scale in human resources.
- We have enhanced economies of scale in technological resources.
- We have increased control of IS expenses.
- We have reduced the risk of technological obsolescence.
- We have increased access to key information technologies.
- We are satisfied with our overall benefits from outsourcing.

### Items Measuring Expected Tangibles and Reliability of Service Quality

#### *Tangibles*

- Excellent service providers will have modern-looking information technology [IT] facilities.
- The physical IT facilities at excellent service providers should be visually appealing.
- Employees of excellent service providers will be neat-appearing.
- Materials associated with the service [such as pamphlets or statement] will be visually appealing.

#### *Reliability*

- When excellent service providers promise to do something by a certain time, they will do so.
- When customers have a problem, excellent service providers will show a sincere interest in solving it.
- Excellent service providers will perform the service right the first time.
- Excellent service providers will provide their services at the time they promise to do so.
- Excellent service providers will insist on error-free records.

### Items Measuring Perceived Tangibles and Reliability of Service Quality

#### *Tangibles*

- Our service provider[s] has modern-looking information technology [IT] facilities.
- Our service provider's physical IT facilities are visually appealing.
- Our service provider's employees are neat-appearing.

Materials associated with the service [such as pamphlets or statement] are visually appealing in an excellent service provider.

*Reliability*

When our service provider[s] promises to do something by a certain time, it does so. When we have a problem, our service provider[s] shows a sincere interest in solving it.

Our service provider[s] performs the service right the first time.

Our service provider[s] provides its services at the time it promises to do so.

Our service provider[s] insists on error-free records.

Items Measuring Dimensions of Partnership

The service provider[s] lets our organization know as soon as possible of any unexpected problems.

Based upon your past and present experience, the level of trust your organization has in its working relationship with service provider[s] is very high.

Your organization and service provider[s] help out each other in whatever ways each asks.

Our organization's working relationship with the service provider[s] has been a happy one.