Perceived Service Quality, Relationship Quality, and IT Outsourcing Success in Malaysian Organizations

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ABSTRACT

The objective of this research was to examine the outsourcing of IT functions in Malaysian organizations; in particular how variables like perceived service quality of outsourcer and relationship quality affect outsourcing success. The research adopted a cross-sectional approach and employed both self-administered and mailed survey procedure. The unit of analysis is organizational level. In order to achieve the research objective, data was analyzed using structural equation modeling. The measures seem to demonstrate internal consistency for Malaysian organizations. The study confirms that perceived service quality of outsourcer determines both relationship quality and IT outsourcing success. However, there was no link between relationship quality and IT outsourcing success for Malaysian organizations. Lastly, the finding indicates that the proposed research model is good fit to the observed data.

Keywords: Service quality, relationship quality, information technology outsourcing, structural equation modeling

1. INTRODUCTION

Information technology (IT) outsourcing is neither a new nor an emerging trend. In recent years, the growth of IT outsourcing has been phenomenal. In year 2001, the worldwide spending on IT outsourcing services already reached over USD60 billion and the figure was expected to grow by a 5 year compound average growth rate (CAGR) of 12 per cent[1].

In Malaysia, the International Data Corporation (IDC) expected the IT outsourcing market to grow at 34.2% over the next five years since year 2004. The nature of services being provided and the type of contracts that are being signed, according to IDC, would largely determine the IT outsourcing market size[2]. IDC also forecasted that the Malaysian IT outsourcing market would hit the US$164 million mark by 2005 (Manecksha, 2003).

The IT outsourcing market for the financial sector in Malaysia has been largely shaped by the Financial Master Plan of the Malaysian Central Bank revealed in year 2001. One notable key principle of the plan was the encouragement for banks to outsource non-core back office and IT processes towards enhancing internal efficiency and enabling focus on selling and marketing financial services products. Several blue chip Malaysian banking firms answered this call. Malaysia's anchor banks such as, Maybank and Bumiputra Commerce Berhad notably and recently announced the signing of major IT outsourcing agreements. In year 2003, Maybank signed an outsourcing agreement estimated at RM1.3 billion over a 10-year period with the CSC Group to outsource IT infrastructure services in Malaysia and Singapore[3]. The Bumiputra Commerce Berhad, signed a USD250 million outsourcing contract for a period of over 10 years with EDS Malaysia. Malaysia also sees the trend of outsourcing IT functions in government-linked companies[4]. In year 2003, Permodalan Nasional Berhad (PNB), Malaysia's leading fund manager signed a major IT outsourcing agreement for a period of three years with HeiTech Padu Berhad a local home-grown IT service provider[5]. In Malaysia, the outsourcing of IT functions does not limit itself within the financial industry. In the transportation industry, the Malaysian Airlines Systems in year 2003 awarded a US$116 million outsourcing contract to IBM Global Services[6].

While the IT outsourcing trend in Malaysia has been encouraging, empirical studies on the contributions of perceived service quality of outsourcer and relationship quality between client and outsourcer to IT outsourcing success seem to lack. Hence, this paper aims to determine whether perceived service quality of outsourcer and relationship quality between client and outsourcer predict IT outsourcing success in Malaysian organizations. In this research, the client evaluates the service quality of outsourcer and the quality of relationship between the client and outsourcer. In other words, the research assumes the perspective of client in an outsourcing arrangement.

This paper is organized into six sections. This section has introduced the research area. A review of literature is in section two. Section three depicts the hypotheses and research model. Section four presents the methodology. The findings and discussions are available in section five. The last section provides the conclusions of this study.

2. REVIEW OF LITERATURE

This section reviews the literature on IT outsourcing success, perceived service quality of outsourcer and relationship quality between client and outsourcer.

2.1 IT Outsourcing Success

In the past, researchers attempted to provide several definitions of IT outsourcing success. Grover *et al*., (1996) defined outsourcing success as the benefits derived from the practice of turning over part or all of an organization's IT functions to be administered by one or several external service providers. The outcome of IT sourcing decisions meeting expectations was referred to as outsourcing success (Lacity and Willcocks, 2001). Lee and Kim (2003) defined outsourcing success as the level of fitness between service receiver requirements and outsourcing outcomes delivered by the service provider. More recently, IT outsourcing researchers seem to focus on client's experience of integrated outsourcing success (Grover *et al.,* 1996, Lee and Kim, 1999; Lee, 2001; Lee and Kim, 2003). Clients derive three main benefits of outsourcing success, namely:

- *strategic benefit*: the ability of a firm to focus on its core business by outsourcing routine IT activities' (Lacity and Willcocks, 1998; Williams, 1998)
- *economic benefit:* the ability of a firm to use expertise and economies of scale in human and technological resources of the service provider and to manage its cost structure through unambiguous contractual arrangement (Smith *et al.,* 1998; Klepper and Jones, 1998; Bryson and Ngwenyama, 2000).
- *technological benefit*: 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' (Lacity and Willcocks, 1998, Aubert *et al*., 1999, Lee *et al*., 2000).

2.2 Perceived Service Quality of Outsourcer

The quality of service is thought to be the core criterion for overall customer service (Parasuraman *et al.,* 1991). Service quality is defined as the overall support delivered by the service provider, regardless whether such support is handled by the IT department, a new organizational unit or outsourced to an Internet service provider (DeLone and McLean, 2003). From the service receiver perspective, the service quality delivered by service provider may contribute to outsourcing success (Grover *et al*., 1996; Jiang *et al*., 2003).

IS researchers have been assessing service quality using the SERVQUAL instrument. Based on Parasuraman *et al.,* (1988), the service quality dimensions in the SERVQUAL instrument comprise the following elements namely:-

* *Tangibles:* appearance of outsourcer's physical facilities, equipment, personnel and communication materials;
* *Reliability:* outsourcer's ability to perform the promised service dependably and accurately;
* *Responsiveness:* outsourcer's willingness to help customers and provide prompt service;
* *Assurance:* knowledge and courtesy of outsourcer's employees and their ability to convey trust and confidence;
* *Empathy:* caring, individualized attention which the outsourcer provides to its customers.

Grover *et al.,* (1996) found that service quality had a direct effect on IT outsourcing success in 188 firms in the United States. They concluded that improved service quality and fostering relationship between outsourcer and client had a significant and positive impact on the success of application development and maintenance outsourcing functions. However, only reliability and tangibles constructs were considered in the assessment of service quality in their research. In an empirical research among 168 users and 168 IS professionals, Jiang *et al,*. (2002) concluded that the SERVQUAL was a valuable analytical tool for IT managers.

2.3 Relationship Quality

A working relationship, according to Henderson (1990), is reflected by 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. In recent years, managing relationship has been regarded as an important role in the effective acquisition and management of emerging information technologies (Grover *et al.,* 1996, Koh *et al.,* 1999, Lee and Kim, 1999, Lee *et al.,* 2004). Consistent with these arguments, researchers suggested that IT outsourcing relationship quality encompasses:-

* *Benefit and risk sharing*: this refers to the degree of articulation and agreement on benefits and risks between partners (McFarlan and Nolan, 1995). Lee and Kim (1999) concluded that benefit and risk share had a positive effect on outsourcing success. Sun *et al*., (2002) found mutual benefit had the greatest impact on outsourcing success.
* *Trust*: the degree of confidence and willingness between IT outsourcing partners (Lee and Kim, 1999; Sabherwal, 1999; Mohr and Spekman, 1994). Sabherwal (1999) found that trust as a key factor in outsourcing of information system development projects. Lee and Kim (1999) found trust had a significant effect on outsourcing success. Wietz *et al.* (2004) found support for the relationship between trust and multiple service channel cooperation
* *Commitment:* cooperative behaviors that provide the context in which both partners could achieve joint goals without raising opportunistic behavior (Mohr and Spekman, 1994). Lee and Kim (1999) indicated that commitment was significantly associated with outsourcing success. Sun *et al.* (2002) found that there was a positive relationship between commitment and IT outsourcing satisfaction.
* *Knowledge sharing:* the extent to which critical or propriety information is communicated between partners (Lee and Kim, 2003). Lee (2001) found knowledge sharing was significantly associated with the degree of attainment of outsourcing benefits.
* *Business understanding:* the degree of understanding in behaviors, goals and policies between partners (Lee and Kim, 1999). Lee and Kim (1999) found business understanding had a significant effect on outsourcing success from both business and user perspectives. Rai *et al.,* (1996) identified congruity in relationship affected strategic alliances between organizations in IT industry.

Crosby *et al.,* (1990) suggested that service quality could influence relationship quality. On the contrary, Gwinner *et al.,* (1998), in a qualitative research, suggested that customers in service industries might remain in a relationship even if they perceived the core service attributes to be less than superior service quality provided that they received important relational benefits. Similarly, Zeithaml *et al.,* (1996) found that service quality directly influenced relational quality. In Australia, Wong and Sohal (2002) indicated that there was a positive and direct relationship between service quality and relationship quality for shoppers in a retail chain department store. More recently, Roberts *et al.,* (2003) research showed that managers needed to consider not only the quality of the service provided but also the quality of consumers' relationship with the organization. However, the context of the research was not in IT outsourcing but consumer purchases.

2.4 Gap in the Literature

To the best of the researchers' knowledge, empirical research on perceived service quality of outsourcer and relationship quality in the context of IT outsourcing continues to remain an under-investigated research area especially in developing nations like Malaysia.

3. RESEARCH HYPOTHESES & RESEARCH MODEL

The objective of this research was to examine the outsourcing of IT functions in Malaysian organizations; in particular how variables like perceived service quality and relationship quality affect outsourcing success. Based on the literature review, the hypotheses of this research are listed as follows:

H_1: *Perceived service quality of outsourcer is associated with IT outsourcing success in Malaysian organizations.*

H_2: *The relationship quality between outsourcer and client is associated with IT outsourcing success in Malaysian organizations.*

H_3: *Perceived service quality of outsourcer contributes to relationship quality between outsourcer and client in Malaysian organizations.*

Figure 1 shows the research model, depicting the various hypotheses.

4. METHODOLOGY

The research adopted a cross-sectional approach and employed both self-administered and mailed survey procedure. Measures of IT outsourcing benefits were adapted from Lee *et al.* (2004). Respondents were required to evaluate agreement to statements that used a seven-point Likert scale. A seven-point represents "strongly agree" while a one-point represents "strongly disagree". Measures of perceived service quality IT outsourcer were adapted from Jiang *et al*., (2002). Respondents were required to evaluate agreement to statements that used a seven-point Likert

Figure 1. Research model
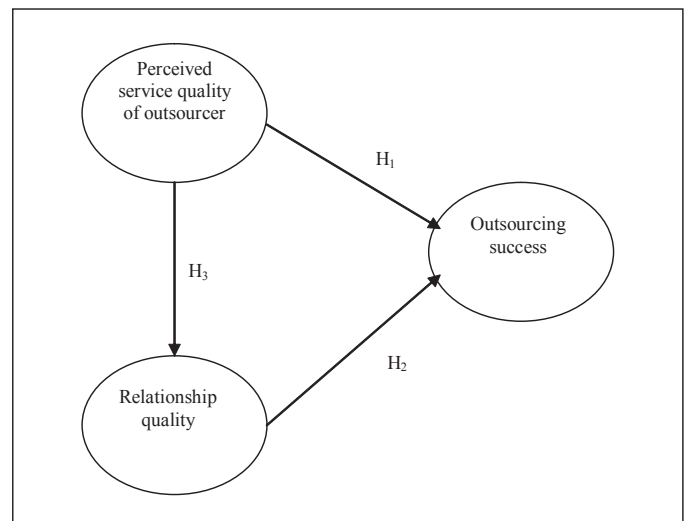
scale. A seven-point represents "strongly agree" while a one-point represents "strongly disagree". Measures of relationship quality were adapted from Lee and Kim (1999). Respondents were required to evaluate agreement to statements that used a seven-point Likert scale. A seven-point represents "strongly agree" while a one-point represents "strongly disagree".

The unit of analysis in this research is organizational level. According to IT outsourcing literature, many empirical studies set out the measurement of organizational characteristics using the 'key informant' approach. IT managers or the equivalent level to such position holders were selected as key informant to provide information on an aggregated unit of analysis of their outsourced IT functions. Target responding organizations broadly consisted of government and private sectors situated in Putrajaya and the Klang Valley. A sampling frame was formulated based on listing in the Malaysian government official website, Federation of Malaysian Manufacturers (FMM), Small and Medium Industries Development Corporation (SMIDEC) and Bursa Malaysia (the Malaysian Stock Exchange). The estimated number of population was 2475.

We conducted a pre-test among academics as well as practitioners in government and private sectors. Consequently, we incorporated their feedback in ensuring the quality of the questionnaire. We then distributed 50 questionnaires to both government and private organizations in a pilot study. Out of 50, we only received 23 or a response rate of 46%. The questionnaire was revised based on suggestions made. Using stratified systematic sampling method, a total of 960 questionnaires were distributed and e-mail alerts were generated. Data were collected through paper-based questionnaire and web site from April 2005 until July 2005.

5. FINDINGS AND DISCUSSION
In total, we received 162 questionnaires (approximately 18% response rate). Only 143 were found usable for analysis. Unusable questionnaires included those that were returned completely unanswered, incomplete responses on key variables, and organizations that did not practice outsourcing. Data was cleaned and coded accordingly in SPSS Version 13.0. Data was then analyzed using both SPSS Version 13.0 and AMOS Version 5.0. An analysis on non-response bias was conducted by employing post hoc strategy. The early and late respondents were compared on key constructs. There was no significant difference on major variables.

Table 1. Profile of responding organizations

Characteristics	Frequency	Percent
By Industry		
Government	60	42.0
Other services	36	25.1
Manufacturing	22	15.4
Banking and finance	12	8.4
Education	7	4.9
Telecommunication	6	4.2
By total number of employees		
Less than or 50 *(small size organizations)*	13	9.1
51 – 149 *(medium sized organizations)*	18	12.6
Over 150 *(large organizations)*	112	78.3
By the availability of IT department		
Available	118	82.5
Unavailable	25	17.5
By degree of integration		
Minimal outsourcing (below 20% of IT budget)	47	32.9
Selective outsourcing (between 21%-80% of IT budget)	62	43.4
Comprehensive outsourcing (more than 80% of IT budget)	34	23.7
Types of IT functions outsourced		
Application development	112	78.3
Hardware maintenance	110	76.9
Telecommunication/network	91	63.6
Application maintenance	82	57.3
IT consulting	55	38.5
Data center	32	22.4
Help desk	26	18.2
End user support	27	18.9
Others	8	5.6

5.1 Profile of Responding Organizations
Table 1 shows the profile of responding organizations.

The majority of the responding organizations belonged to the government sector (42%). The remainder organizations were in the private sector. A *t*-test was performed to determine if there could be a significant difference. The finding shows that there was no significant difference. Hence, the sample consisting of 143 organizations was treated as one sample and subsequently used in further analysis.

The majority (82.5%) of the responding organizations indicated that they had IT departments. Only a small proportion (17.5%) did not have IT departments.

In terms of degree of integration for outsourcing, the majority of responding organizations indicated that they conducted selective outsourcing (43.4%). Only 23.7% conducted comprehensive outsourcing.

The majority of the organizations (78.3%) outsourced application development. This was followed closely by hardware maintenance (76.9%). Telecommunication/network was ranked third (63.6%). Slightly more than half (57.3%) of the sample indicated that application maintenance were outsourced. Over a third of the organizations (38.5%) outsourced IT consulting to third parties. Slightly over a fifth (22.4%) outsourced their data center. The remaining organizations outsourced help desk, end-user support and others.

5.2 Reliability and Internal Consistency Check
Table 2 shows the Cronbach's coefficient α that was used to assess the reliability of all multi-item scales.

All scales showed reasonable reliability ranging from .866 to .959. They were well above Norusis (2002) generally accepted alpha level .80, indicating good scales.
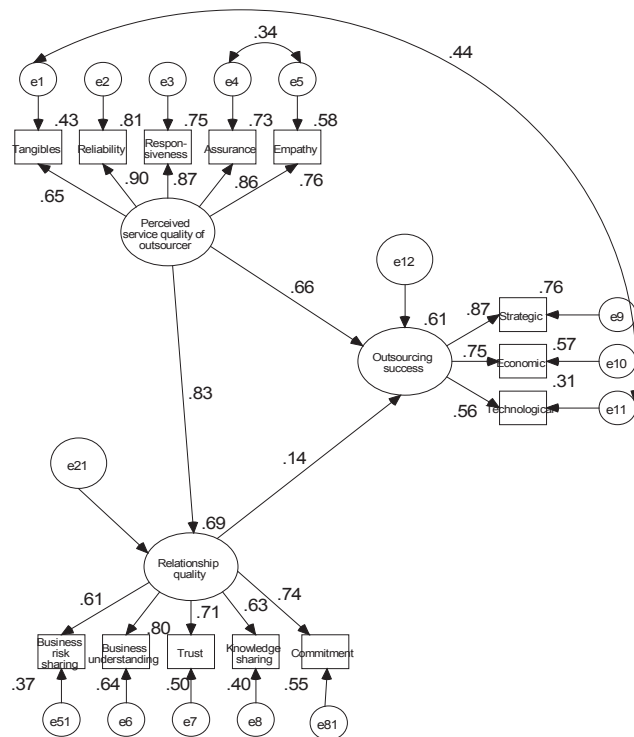
5.3 Evaluation of the Structural Model
Multi-item constructs were measured using a summated scale derived as the average value of all items pertaining to the constructs. AMOS 5.0 was used to test the structural model. Figure 2 shows the standardized parameter estimates.

Perceived service quality of outsourcer predicted IT outsourcing success (β=.66, p<.01) and relationship quality (β=.83, p<.01). Higher levels of perceived service quality of outsourcer resulted in greater IT outsourcing success in Malaysian organizations while greater levels of perceived service quality of outsourcer resulted in clients' experiencing higher levels of relationship quality with outsourcer. The model explained substantial item variance: 61% of the variance in IT outsourcing success and 69% in relationship quality, suggesting that perceived service quality is important in explaining outsourcing success and relationship quality. This finding is consistent with Grover *et al.,* (1996) and Jiang *et al.* (2002). The finding that perceived service quality is linked to relationship quality in IT outsourcing success supports Crosby *et al.* (1990) and Roberts *et al.*, (2003) work. Against expectation, the hypothesized significant relationship between relationship quality and IT outsourcing success in Malaysian organizations was not supported (β=.14, p>.05). This finding appears to be inconsistent with many previous studies (Mohr and Spekman, 1994; Sabherwal, 1999; Lee and Kim, 1999; 2002; Lee, 2001; Sun *et al.*, 2002). One possible explanation for the nonsignificant relationship might be a mediating effect for the relationship between relationship quality and IT outsourcing success; culture could be a possible mediating variable. Beulen and Ribbers (2003) suggested cultural issues played an important role in managing IT outsourcing relationships in Asia. Besides, cultural similarity was considered important to create convergent values to help lead to outsourcing success (Henderson, 1990; Fitzgerald and Willcocks, 1994). This is left for investigation in future studies.

Table 2. Cronbach's coefficient for constructs

Factors	α
Outsourcing success (9 items)	.866
Perceived service quality of outsourcer (21 items)	.959
Relationship quality between client and outsourcer (17 items)	.923

Figure 2. Structural model

6. CONCLUSIONS

The objective of the research was to determine whether perceived service quality of outsourcer and the relationship quality between client and outsourcer predict IT outsourcing success in Malaysian organizations. The research affirms that perceived service quality of outsourcer determines both relationship quality and IT outsourcing success. This phenomenon is consistent with findings of organizations in other countries. In contrast with previous studies, the research did not find a link between relationship quality and IT outsourcing success for Malaysian organizations. Culture might be a mediating variable between relationship quality and IT outsourcing success. Hence, the research enhances our understanding in the role of perceived service quality of outsourcer and relationship quality on IT outsourcing success especially in Malaysian organizations. Overall, the findings call for outsourcers in Malaysia to focus on and enhance the quality of IT services in sustaining relationship quality and attaining benefits from outsourcing.

Some limitations exist and should be acknowledged. Firstly, the research used cross-sectional approach and was static in nature. Therefore, the research did not directly examine the temporal aspects. Future research may consider longitudinal approach. Secondly, the research used single respondent. The perspective was IT managers. Future research may employ actual observations or interviews with different actors conducted at different managerial levels in selected organizations or industries to obtain the benefits of triangulation in understanding the outsourcing phenomenon. Third, this research examined the proposed research model only from the service receiver's perspective. Analysis of the relationship that includes service provider's perspective would be crucial in developing and sustaining high-quality relationship over time. Fourthly, future studies should investigate the mediating effect of culture on the relationship between relationship quality and IT outsourcing success. Finally, results of this research may not be completely generalized and may have to be carefully interpreted since the setting was restricted to Malaysia. The practice of outsourcing in Malaysia and its socioeconomic environment may have played a distinct role to the findings of this research.

The confirmation of the overall proposed model was important in providing empirical evidence on predictors of IT outsourcing success (see Table 3).

The χ^2=97.405, df=60, p=.002. According to Raykov (2000), χ^2 and p-value are not the only indicators for model fit. The indicators GFI, NFI, IFI, TLI and CFI for the research model are greater than .90; which indicate good fit to data. The RMSEA=.06 which is approaching .05 indicates a reasonable fit to data (Diamantopoulos and Siguaw, 2000). Overall, the finding indicates that the fit for the structural model for IT outsourcing success was good. In conclusion, there is evidence to support the notion that the model explains a substantial percentage of the variance of the construct.

Table 3. Goodness of fit measures

Fit measure	Value for the research model
χ^2	97.405
Degrees of freedom	60
p-value	.002
GFI	.902
Adjusted GFI	.852
Normed fit index (NFI)	.917
Relative fit index (RFI)	.892
Incremental fit index (IFI)	.966
Tucker Lewis index (TLI)	.956
Comparative fit index (CFI)	.966
RMSEA	.06

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