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The impact of IT outsourcing on information systems success

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Dedication: This article is dedicated in memory of my beloved wife Swarnalatha Gorla, who meant everything to me – Narasimhaiah Gorla.

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ABSTRACT

The objective of this research is to assess the impact of IT outsourcing on Information Systems' success. We modeled the relationships among the extent of IT outsourcing, the ZOT (the Zone of Tolerance), and IS success. We justified our model using the expectancy–disconfirmation theory, the agency theory, and transaction cost economics, and we empirically tested it using structural equation modeling with responses from IS users. We found significant direct and indirect effects (through the service quality) of outsourcing on IS systems' perceived usefulness and their users' satisfaction. Whereas the extent of outsourcing is negatively related to the service quality and perceived usefulness, the ZOT-based IS service quality is positively related to the user satisfaction.

1. Introduction

Information Systems (IS) products and services have traditionally been delivered by internal IS departments. However, IS outsourcing has become an alternate or complementary delivery mechanism. IS outsourcing has been growing at the rate of 14% annually [64], and the current IT services market is valued at $746 billion [41]. In addition to the IT outsourcing trend in the industry, the research in the area has been enormous in scale: there have been 164 empirical studies conducted on IT outsourcing over the last 20 years [55]. While some of the motivations of companies for IS outsourcing have been their core business, the rapid introduction of new products, cost reductions, increased access to technical expertise, and the lack of the required internal resources [17,34], internal IS users have been dissatisfied with IT outsourcing. For instance, satisfaction with IS outsourcing has been reported at a rate of only 33%, compared with 70–80% for non-IT outsourced activities [91]. Indeed, a survey has shown that out of 160 IS projects that were outsourced, only 70 projects were continued; the remaining 90 discontinued their current contracts either by switching vendors or by backsourcing [93]. Problems with IT outsourcing include degradations of service, the lack of vendor commitment [72], the ineffectiveness of a vendor [61,32], delayed deliveries of data, and slow implementations [4].

In view of the risk factors just mentioned, companies might have to reconsider their original strategic decisions to outsource IT, which they had thought would provide strategic, economic, operational, and technological advantages. Due to the high failure rates of IT outsourcing, the current research returns people's focus to the original decision making process: whether IT outsourcing is a good decision that will benefit the company and internal IS users and whether the decision to outsource IT was the reason for the failure of the IS. Companies that are planning to enter into IT outsourcing contracts need to seriously consider the following questions: why the company needs to utilize outsourcing and whether it will result in the success or failure of the IS in the company. Thus, a study of the impact of the extent of IT outsourcing on IS success measures is important for both researchers and practitioners.

IS service providers (including outsourcing vendors) deliver not only products but also the services associated with them. When IS users receive IS products from their service providers, they expect after-delivery services, such as training or help with using the providers' software. Thus, the users' systems are value-added by improving their service quality, and hence, the service quality is an

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important measure of IS success. In IS success models [16], the beliefs regarding the system quality, information quality, and service quality can impact user attitudes and behaviors, user satisfaction, the new systems' perceived usefulness (in the Seddon model (1997)), and IS use (in the D&M Model (1992)). IS outsourcing will impact these attitudes and behaviors through the service quality, and major outsourcing vendors attest to the close association between outsourcing performance and customer service [11]. In this research, we study IT outsourcing and IS service quality jointly to examine their impact on IS success measures; in particular, we consider ZOT-based (Zone of Tolerance-based) service quality measures, the perceived usefulness, and the user satisfaction. To this end, the following research questions are addressed in this study:

(i) What are the direct impacts of IT outsourcing on IS success measures of perceived usefulness and user satisfaction?
(ii) What are the effects of the IS service quality (in terms of Zone of Tolerance (ZOT) measures) on the IS success measures of perceived usefulness and user satisfaction?
(iii) What are the indirect impacts of IT outsourcing (mediated through the ZOT-based service quality) on the perceived usefulness and user satisfaction?

This paper offers the following contributions: first, we highlight a problem area that is worthy of additional study by demonstrating the importance of outsourcing and the service quality to IS success. The use of previous IS success models, i.e., the D&M models (1992, 2003), the Seddon model (1997), and the Rai et al. model [80] model, as guiding frameworks is a vital way to ground the study in the existing body of knowledge. Second, we draw on the logic of the expectancy-disconfirmation, agency, and transaction cost economic theories as the basis for postulating why outsourcing and service quality may work well with the IS success variables. Third, we use the SERVQUAL+ instrument (an improved version of the original SERVQUAL instrument) and ZOT measures that have been used by few IS researchers. Fourth, we develop a model where the service quality is constructed in a nomological network of relationships on which we theorize and test the effects of the service quality. Consequently, our research will shed some light on the well-known controversy between the direct measures and the gap measures of IS service quality in the nomological network of relationships among IS success, IT outsourcing, and ZOT-based service quality.

The paper begins with a relevant literature review of outsourcing, service quality, and IS success measures, which is followed by this research area's theoretical foundations. Then, we introduce the basic elements of our research model and derive hypotheses. Next, the research methodology, measurement issues, data collection, and analysis are described, which is followed by the results and a discussion of the findings. Finally, we present this research's limitations and offer avenues for future research.

2. Literature review

In this section, an attempt has been made to provide a brief overview of the research on IT outsourcing, IS service quality, and IS success.

2.1. IT outsourcing

Outsourcing has become a popular governance mechanism whereby IS services are provided by the external vendor either instead of or in addition to the services provided by the internal IT department. IT outsourcing has witnessed continued popularity, and the IT outsourcing market accounts for 67% of all global outsourcing deals [41]. Lacity et al. [57] have predicted that both the IT and business process outsourcing markets will continue to grow in all global markets (for example, China's market is projected to grow at 38% annually). However, Lacity et al. [56] argue that organizations should carefully select specific IS activities to outsource rather than outsource all IS activities. The outsourcing of IS activities can range between two extremes, namely, from total outsourcing to total insourcing. Instead of treating outsourcing as a dichotomous variable, it is perhaps advisable to treat it as a continuous variable, i.e., as a degree (percentage) of outsourcing activity, as the extent of outsourcing varies for each potential IS activity. Prime candidates for outsourcing include IS development and maintenance, system operation, telecommunication management, system planning and management, and end-user support [34].

Research on IT outsourcing has dealt with topics such as outsourcing decisions [75], client-vendor relationships Faisal and Banwet (2009), vendor issues [53], and the mitigation of outsourcing risks [26]. In addition, the IT outsourcing literature surveys cover analyses of outsourcing topics, methodologies, and authors [28].

IT outsourcing can have both positive and negative effects on the quality of IS services. The positive effects include the modernization of IT infrastructure, obtaining highly skilled human assets from the vendor, and savings in in-house IT expenses [54]. The negative effects include a vendor's inability to cope with changing user information needs, potential delays in service delivery, the loss of control over IT assets, the lack of vendor commitment, and slow implementations [4,51,3,32]. Some of the risks of IT outsourcing can be mitigated through proper governance mechanisms [7]. Enhanced performance from outsourced vendors can be attained when transactions are aligned with governance structures [94]. Self-enforcing safeguards (e.g., trust or financial hostages) are superior to third-party safeguards (e.g., legal contracts), and furthermore, informal self-enforcing safeguards (e.g., trust) are superior to formal self-enforcing safeguards (e.g., financial hostages) [20]. However, given the mixed results of outsourcing performance that have been reported in practice and in the literature [59], it is important to examine the influence of IS outsourcing on IS success.

2.2. IS service quality and ZOTs

The service quality is defined as the degree of discrepancy (the gap) between the customers' perceptions of the service performance and their service expectations. The instrument we utilize, which is known as SERVQUAL, measures the service quality in a broad spectrum of service sectors [73]. The SERVQUAL instrument has been previously validated and used in an IS context (e.g., [78,92]). This instrument employs 22 items grouped into five categories: tangibility, reliability, responsiveness, assurance, and empathy.

Although the use of a gap measure of the service quality has been critiqued (e.g., [89] and the direct measure of service quality with SERVPERF or service performance [13] is recommended, the relevance of SERVQUAL (or service quality) attributes to the measurement of IS success appears to have been generally accepted [47]. Kettinger et al. [50] empirically validated the importance of the perceived service quality (SERVPERF) in predicting the behavioral intentions of customers with respect to reusing IS services. There have also been concerns regarding SERVQUAL in marketing and IS with respect to the ambiguity of the variable "service expectations" and the dimensionality of the instrument.

To address these concerns, the single expectation measure has been conceptualized as two levels of expectation [96]: desired