

# Outsourcing of Information Technology : An Empirical Study in the Indian Banking Industry

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## Abstract

This article studied the key influencing factors that contributed to the decision of commercial banks in India to go in for information technology outsourcing. The research model considered three major drivers of outsourcing and their impact on overall organizational performance. The research approach was illustrated by discussions with senior bankers of various public and private sector commercial banks as well as vendor organizations providing outsourcing services to the banks. Factor analysis suggested that the existence of three factors – Construct Skill and Cost Savings, Technology Benefits, and Strategic Advantage - guided their outsourcing decisions. The findings of structural equation modelling suggested that technology benefits had a direct impact on strategic benefits, but did not have a direct impact on overall organizational satisfaction mediated through skill and cost benefits. In the same way, strategic benefits had an impact on organizational benefits mediated through skill and cost benefits. An important insight from this study is that managers in the banking industry do not consider that technology benefits have a direct impact on the overall organizational satisfaction. This study offers helpful information and guidance to the bank managers for taking decisions related to IT outsourcing. The present study will motivate and justify the bank managers to enforce outsourcing in their organizations.

**Keywords:** Information technology (IT), outsourcing, banking sector, motivating factors, structural equation modeling

**JEL Classification:** D020, E58, G230

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The banking sector in India witnessed large-scale transformation during the 1990s due to financial sector reforms. The steps taken by the Government of India for deregulation and economic liberalization led to the emergence of new generation banks in the banking field. Armed with modern technology, these new generation private sector banks posed serious challenges to the age-old public sector banks. Intense competition resulted in pressure on their margins. To achieve the twin objectives of “cost savings” and “adoption of IT-intensive business processes,” banks were forced to look beyond their boundaries and scout for third party service providers (Khurana & Singh, 2010). The Basel Committee Report on Banking Supervision (2004) Pandya and Prajapati (2013) also mentioned that outsourcing is being adopted by banks globally both for reducing costs and achieving strategic and technical goals.

The idea of outsourcing has its roots in the competitive advantage theory propagated by Adam Smith (1776) in his book entitled *The Wealth of Nations*. Over the past 200 years, the meaning of the term 'outsourcing' has undergone a sea change. Initially, the idea of outsourcing started during the great industrial revolution era (1750 AD to 1900 AD), with an objective of shifting the manufacturing of goods to countries that provided cheap labor.

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But as time passed, the meaning and objectives of outsourcing have totally changed. In today's scenario, information technology (IT) has become the back bone of businesses world-wide, and IT outsourcing has been regarded as the process through which one company hands over its IT-related activities to another company or third party (Franceschini, Galetto, Pignatelli, & Varetto, 2003). The existing literature on determinants of outsourcing decisions shows that cost saving is one of the foremost factors that influenced managers for outsourcing. Also, a majority of the researchers have used 'cost theory' to investigate the antecedents of outsourcing (Dibbern, Goles, Hirschheim, & Jayatilaka, 2004 ; Smith, Mitra, & Narasimhan, 1998). Cost advantage offered by vendors (Ang & Straub, 1998) as well as the need for cost reduction (Apte et al., 1997) encouraged many IT based / related organizations to go for IT outsourcing in the early days.

Though many studies have been done on IT outsourcing across different industries, there are a number of research gaps identified from previous literature, and those are addressed in the current study. The earlier studies conducted on outsourcing in the banking domain were mostly theoretical in nature and focused on Western developed countries (e.g. studies by Federal Reserve Bank of New York, 1999; European Central Bank, 2004 ; etc.). Major outsourcing studies were done on private sector organizations, even though outsourcing of business functions is significant in public sector organizations (Slaughter & Ang, 1996). Contrary to the Western countries, the banking sector in India is controlled by state-owned banks. Secondly, earlier empirical studies - like the one conducted by Jain and Natarajan (2011) on outsourcing in banks explained the factors influencing the outsourcing decisions of managers and their risk perceptions. However, their models did not address the drivers of outsourcing and their impact on the overall outsourcing benefits, or the dimensions of risk having a significant impact on the overall outsourcing risks. Again, they did not study the influencing factors pertaining to the IT domain of banks. Thirdly, researchers like Suhaimi, Hussin, and Mustaffa (2007) and Gulla and Gupta (2012) studied IT outsourcing in banks, but their studies were mostly case based having a very limited sample (one or two) of banks. Furthermore, they also did not consider the factors influencing the overall impact on outsourcing benefits and risks.

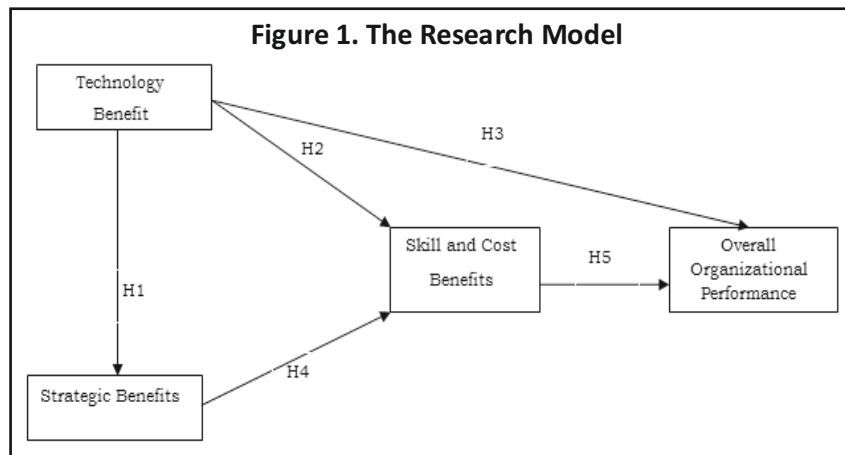
The present study not only attempts to address the aforementioned gaps ; simultaneously, it also tests a model investigating the direct and indirect effects of those outsourcing determinants on overall organizational satisfaction specific to the Indian banking industry. This study will be an important extension of outsourcing research and will provide empirical evidence of interdependent relationships among the outsourcing determinants.

## Research Model and Hypotheses

The conceptual model proposed in this study suggests three determinants of overall organizational satisfaction: Technological benefits, strategic benefits, and skill & cost benefits. These constructs are positively related to each other and also influence the overall organizational satisfaction (Figure 1).

➤ **Overall Organizational Performance and Outsourcing :** In the last few decades, due to financial sector reforms, globalization, privatization, and large scale technology adoption, the banking sector became more vibrant and competitive. Outsourcing offers benefits to organizations, sectors, and the nation as a whole (Harland, Knight, Lamming, & Walker, 2005). The banking sector was also influenced by the various benefits of outsourcing. An initial study on outsourcing activities in the banking sector conducted by the Federal Reserve Bank of New York in 1999 showed that banks outsourced financial services mostly for (a) enhancement of performance, (b) reduction of costs, (c) access to superior expertise, and (d) strategic reasons. Since bank specific studies pertaining to outsourcing are limited, we analyzed the observations of researchers on both banking and non-banking industries to develop the conceptual model.

A study by Pujals (2005) on offshore outsourcing in the European Union financial services industry found that financial organizations were likely to outsource activities for getting both financial and technological benefits. The main drivers were (a) reduction in cost, (b) getting access to new technology, (c) improving quality of service,



(d) focus on core activities, and (e) enjoying flexibility. Pinnington and Woolcock (1995) conducted a study on information systems (IS) outsourcing involving senior persons responsible for IS in 'Top 150' UK companies across industry sectors. Their study found that the drivers for IT outsourcing were cost control and cost reduction, focusing on core competencies, access to new expertise and new technologies, and improved flexibility. Gewald (2010), in his study on outsourcing in the German banking industry, observed that there was a significantly higher value associated to the programmability cost in case of business process outsourcing (BPO) than actual cost savings. Suhaimi et al. (2007), in their study on information systems (IS) outsourcing in a Malaysian bank, found that the motivating factors for banks going for IT outsourcing were : (a) focusing on core competencies, (b) turning non-profit activities into profit-generating activities, and (c) cost reduction.

Jain and Natarajan (2011) studied the factors influencing outsourcing decisions in the Indian banking sector and found that focus on core competencies, improvement in customer service and operational efficiency, access to technology, skill and resources, and cost savings were the main drivers of outsourcing. Sohail (2011), in his study on usage of IT outsourcing in Saudi Arabia involving 178 firms, found that most of the users were overall satisfied with the IT service providers and had largely seen positive developments within the organization. In another study by Soliman, Chen, and Frolick (2002) on IT outsourcing, the authors found that organizations, both large and small, increasingly outsourced their applications to application service providers for a variety of reasons such as cost reduction, shorten time-to-market, lack of internal expertise, and risk reduction. However, for their success, instead of focusing solely on costs, the approach should focus on seeking solutions that will provide organizations with greater overall value, that is, result in overall benefit for the organization.

Cox, Roberts, and Walton (2011) studied the Information Technology (IT) outsourcing in four local government councils in the UK. They found that in IT outsourcing, success depended upon councils's focus on achieving the best value rather than simply focusing on lowest cost. Peslak (2012) studied outsourcing by analysis of secondary data obtained from an international survey on financial executives on technology issues and found that the organizations surveyed reflected a general satisfaction with outsourcing and off-shore outsourcing. They found that while the overall use of outsourcing did correlate with higher IT returns, offshore outsourcing did not correlate with higher IT returns to the organization at traditional significance levels. Thus, IT outsourcing benefits were positively associated with the overall organizational satisfaction.

Next, we reviewed several studies describing the nature of IT outsourcing benefits and their relationship with overall organizational benefits.

✎ **Technology Benefit :** Technology is considered to be a factor that influences the competitive position of a business organization (Gandhi, Gorod, & Sauser, 2012). Technology based services offered by banks through ATMs and other e-channels provide quick and efficient service to customers at anytime and anywhere (Uppal, 2010). Therefore, one of the main reasons for outsourcing in the banking sector is getting technology benefits (Jain

& Natarajan, 2011 ; Pujals, 2005). Technology has helped in removing the communication barrier among organizations. Using the technology advantage, majority of the business organizations are going for collaboration or “outsourcing business models,” where people can work interdependently with a shared purpose across place, time, and organizational boundaries (Sakthivel, 2005). Furthermore, motivation for outsourcing technology comes from the fact that development of technology can be expensive, and it is difficult for an organization to take a decision as to which technologies should be developed in-house and when developed in-house, it must be ensured that the technology supports sustaining competitive advantage (Jennings, 2002). The study of literature shows that the main motivators for IT outsourcing are (a) access to technology, (b) focus on core activities, (c) cost savings (Costa, 2001; Pujals, 2005 ; Suhaimi et al., 2007 ; Yang, Kim, Nam, & Min, 2007) and (d) skill (Gupta & Gupta, 1992; Jain & Natarajan, 2011).

- **H1:** The technological benefit has a positive impact on strategic benefit of the organization.
- **H2:** The technological benefit has a positive impact on skill and cost benefits of the organization.
- **H3:** The technological benefit has a positive impact on the overall organizational performance.

🔗 **Strategic Benefit :** Cost is not the main consideration behind information technology (IT) outsourcing. The rapidly changing pace of IT causes immense strain on the internal IT department of an organization. Lack of required IT resources (hardware, software, skilled personnel, and time) influence an organization to implement new strategies of going in for an outsourcing arrangement instead of developing the same in-house (Gupta & Gupta, 1992). Chen and Perry (2003) conducted a study on outsourcing for E-Governance in three public agencies of USA and found that successful management strategy to pursue in IT outsourcing was selective outsourcing with a strategic fit.

Zhu, Hsu, and Lillie (2001) commented that the role of outsourcing was not only a cost-saving method, but was also a part of the overall management strategy to focus on core competitiveness. There has been a growing awareness of the potential of outsourcing to support a range of strategies beyond that of lower cost. Leavy (2004) found that four of the most promising opportunities for using outsourcing strategies were – focus, scale without mass, disruptive innovation, and strategic repositioning. Another study by Gottschalk and Solli - Saether (2005) on IT outsourcing using case studies and survey method involving three IT outsourcing relationships: ABB-IBM, SAS-CSC, and RR-EDS [1] found that core competence management and stakeholder management were the most critical success factors.

Schniederjans and Cao (2006) conducted a study on strategic and tactical perception of outsourcing in U.S. commercial banks. Their study revealed that there was significant difference in the perceptions on outsourcing goals between the top management and information system (IS) professionals at the tactical level. When top management consistently and significantly aimed at strategic achievements through outsourcing, IS/IT professionals looked at outsourcing from a different perspective. Gulla and Gupta (2012), in their study on IT outsourcing, found that strategic benefits were the most important driver for information technology outsourcing in Indian banks. Similarly, most organizations preferred to put an emphasis on their core activities rather than on non-core activities (Haag & Cummings, 2008 ; Pujals, 2005 ; Rouse & Corbitt, 2003; Suhaimi et al., 2007). Also, since non-core functions produce no revenue for the organization, outsourcing these activities allows the organizations to focus on their core activities, which could result in an increase in higher profits (Haag & Cummings, 2008).

Thus, we hypothesize that:

- **H4:** The strategic benefit has a positive impact on the organizational skill and cost benefits.

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<sup>1</sup> ABB = Asea Brown Boveri, an Engineering giant headquartered in Jurich, IBM = International Business Machines Corp.

✍ **Skill and Cost Benefits :** Information technology is rapidly changing. As a result, organizations need skilled manpower to manage their IT infrastructure (software, hardware, etc.), and getting access to skill of the vendors influences the managers to go in for outsourcing (Jain & Natarajan, 2011). In any business organization, managers always look for reducing cost and increasing profitability through outsourcing of activities (Bandyopadhyay & Pathak, 2007 ; Kakabadse & Kakabadse, 2002 ; Lacity & Hirschheim, 1993 ; Loh & Venkatraman, 1992 ; Pujals, 2005).

Loh and Venkatraman (1992) conducted a survey on 55 large organizations of USA consisting of both service and industrial units to find out the determinants of IT outsourcing and found IT outsourcing to be positively related to the extent of a firm's business as well as its IT cost structure. Another survey by Collins and Millen (1995) conducted with 110 chief information officers of 500 largest industrial firms in the USA found that cost savings resulting from a reduction of personnel were the main reason for outsourcing.

As information technology evolved during the last two decades, financial services firms began to outsource a greater variety of IT activities in order to lower their operating costs and gain faster access to state-of-the-art technology. Cost of establishing and maintaining an IT infrastructure is becoming higher than non-IT infrastructure in many business organizations. Managements looked for outsourcing to reduce their capital costs (Apte et al., 1997, Loh 1994). Ang and Straub (1998) empirically studied the drivers of IT outsourcing in 243 U.S. banks. Their study found that IT outsourcing decisions in these banks were still strongly influenced by production cost advantages offered by the third-party vendors. The review of literature also reveals “cost savings” as the most commonly accepted motivating factor for outsourcing (Bandyopadhyay & Pathak, 2007 ; Gupta & Gupta, 1992 ; Loh & Venkatraman, 1992; McFarlon & Nolan, 1995; Pujals, 2005 ; Willocks, Fitzgerald, & Fenny, 1995; Williamson, 1975).

➡ **H5:** The organizational skills and cost have a positive impact on overall organizational performance.

From the study of literature, the following points have emerged: the growth of outsourcing is mainly attributed to its supposed benefits. Organizations are attracted by outsourcing vendors offering to (a) cut costs, (b) provide clients with state-of-the-art technology, (c) possessing required IT skills and expertise, and (d) freeing up the management's time to focus on central strategic business issues (core functions). These can be grouped under three broad benefits, namely, economic, technological, and strategic.

## Research Methodology

✍ **Data Collection Procedure and Sample :** The study is based on primary data collected through a structured questionnaire. Simple random sampling method was used for the study. There were a total of 89 scheduled commercial banks in India as on March 31, 2012 (RBI , 2013), those included 43 foreign banks, 26 public sector banks, seven (7) new generation private sector banks, and 13 old private sector banks. As these 43 foreign banks accounted for less than 5% (3.87% deposits and 4.49% advances) of the total business of all the scheduled commercial banks in India, they were excluded from the present study. All the remaining 46 scheduled commercial banks (26 public sector and 20 private sector banks) were selected for the study throughout India.

The questionnaire was designed by conducting telephonic and personal interviews with senior bankers of various public and private sector banks as well as with vendor organizations providing outsourcing services to the banks. As per our convenience, some focus groups were also conducted, and the questions were asked on outsourcing motives. By the end of the fourth focus group, we could evidence saturation of information, and hence, the focus group exercise was called off. The finalized questionnaires were sent to professional investigators as well as to top level officers of the respective banks. Follow-up interviews were made through personal contacts and over telephone, soliciting the views of the respondents. Finally, data were collected from 155 top level bank officers from 22 public sector banks and nine (9) private sector banks, which represented 90% of the total business



(deposits and loans) of all the commercial banks, and the sample size represented 63.26% of the total public and private sector commercial banks in India. The opinion of the respondents was captured through a 5-point Likert type scale, where “1” indicated *strong disagreement* and “5” indicated *strong agreement*.

## Analysis and Results

An exploratory factor analysis using SPSS 20.0 was applied with 15 items to identify the motivating factors for outsourcing of IT services in the Indian banking sector. The values for Kaiser- Meyer-Olkin Measure (KMO) for sampling adequacy was 0.861, which exceeded the recommended cut-off value of 0.6 and Bartlett's test of sphericity also attained a statistical significance of  $p < 0.001$  (Hair, Black, Babin, Anderson, & Tatham, 2008). In accordance with Hair et al.'s (2008) criterion, only those factors with Eigen value greater than 1 were retained for analysis based upon the results of the factor analysis with varimax rotation using the principal component analysis extraction method. This resulted in three factors explaining 75.57% of the variance out of the 14 items that loaded (refer to Table 1).

In Table 3, the details of the factor loadings have been explained with proper naming of the factors. The factor 1 is named as Construct Skill and Cost Savings, which accounts for close to 56% of the total variance. In all, seven variables were loaded on this factor. Gaining access to vendor's skill and expertise (0.843) is one of the important drivers for the banks to go for IT outsourcing in order to remain competitive in the market, but internal employees may not have the skills/ expertise to handle such technology products ; hence, banks are forced to engage skilled staff of third party organizations. In addition to that, saving capital cost on IT systems is the next important factor for IT outsourcing (0.842). Due to the huge capital cost involvement in setting up of IT infrastructure, banks feel that IT outsourcing will help in saving such costs. Hence, the second factor is labeled as Technology Benefits that accounted for 11.52% of the total variance, loaded with four variables. Developing the IT products in-house and then going to the market is time consuming. Banks feel that by outsourcing their IT functions, they can reduce the time to market (0.868). Banks put emphasis on designing innovative technology products to attract their customers. Thus, to get a scope for innovation is a driver for IT outsourcing (0.859). This may be possible on the part of the vendors due to their increased exposure in the IT field. Banks in India are passing through a transition phase from age old manual systems to fully automated core banking systems. Banks feel that by outsourcing IT, business process re-engineering tasks can be accelerated (0.845). Today's customers are tech-savvy, but technology changes very fast. In order to get access to technology, banks want to go in for outsourcing their IT functions (0.598).

The third factor is labeled as Strategic Benefit, which accounts for 8.173% of the total variance. Here, the driver for IT outsourcing is to free resources for other demanding projects (0.857). Banks always like to utilize their scarce resources in a productive way so as to improve their performance. Outsourcing will help them in freeing both human resources as well as financial resources from IT projects to other demanding projects/activities. Furthermore, to stay focused on their core functions drives the banks for outsourcing IT functions (0.728). Core functions (like canvassing of deposit/loans, etc.) are more vital for the banks as these functions generate profits for them. Hence, banks prefer to outsource their IT functions, which are non-core activities. No business activity is free from risk. Banks feel that IT outsourcing will help them in sharing their business risks with the vendor organizations (0.726). All the factors in factor analysis have Cronbach's alpha value greater than 0.70, which suggests that all factors have adequate scale reliability (Hair et al., 2008; Nunnally, 1978).

To assess the measurement reliability and construct validity of the identified factors, a confirmatory factor analysis (CFA) was conducted using AMOS 20.0. The measurement model reflects an adequate fit with chi-square (CMIN) value of 141.276 and 74 degrees of freedom resulting in chi-square to degree of freedom ratio (CMIN/ goodness of fit. The Table 2 presents all eight estimated model fit indexes of first-order measurement model/*df*) of 1.909, which is less than the recommended value of 3 (Anderson & Gerbing, 1988; Hair et al., 2008). Seven other generally used model-fit indexes were also estimated to judge the model's overall fitness.

**Table 1. Descriptive Statistics and Factor Rotation Solution of the Measurement Instruments**

Factors	Statement	Variable	Mean	Standard Deviation	Factor Loadings
Skill and Cost Savings	Access to IT Skill / Expertise of Vendor	SCB1	3.529	1.158	0.843
	Saving of Capital Cost	SCB2	3.458	1.197	0.842
	Saving of Operation Cost	SCB3	3.206	1.149	0.826
	Cater to New Demands	SCB4	3.245	1.321	0.711
	Improvement in Customer Service	SCB5	3.342	0.983	0.629
	Avoid Staff Headache	SCB6	3.032	1.416	0.620
	Increase Competitiveness	SCB7	3.277	1.029	0.555
Technology Benefits	Reduce Time to Market	TB1	3.335	1.208	0.868
	Scope for Innovation	TB2	3.735	1.105	0.859
	Accelerate BPR	TB3	3.413	0.959	0.845
	Access to Technology	TB4	3.439	0.933	0.598
Strategic Benefits	Freeing of Resources for other Demanding Projects	SB1	3.451	1.124	0.857
	Focus on Core	SB2	2.723	1.029	0.728
	Sharing of Business Risks	SB3	2.994	1.084	0.726

**Table 2. Model Fit Indexes for the Measurement Model**

Model fit Index	Recommended Value*	Measurement Model
Chi-square to degree of freedom ratio (CMIN/df)	3.000 or below	1.909
Goodness of fit index (GFI)	0.900 or above	0.976
Adjusted goodness of fit index (AGFI)	0.900 or above	0.930
Normed fit index (NFI)	0.900 or above	0.982
Incremental fit index (IFI)	0.900 or above	0.970
Comparative fit index (CFI)	0.900 or above	0.982
Root mean square residual (RMSR)	0.100 or below	0.068
Root mean square of error approximate (RMSEA)	0.070 or below	0.034

\*Recommended values as suggested by Anderson and Gerbing (1988) and Hair et al. (2008)

➤ **Measurement Reliability** : For assessment of survey scale reliability, we estimated the Cronbach's alpha ( $\alpha$ ) value. Hair et al. (2008) and Nunnally (1978) emphasized that the reliability coefficient above 0.70 demonstrates adequate reliability. As shown in the Table 3, Construct Skill and Cost Savings ( $\alpha = 0.917$ ), Technology Benefits ( $\alpha = 0.906$ ), and Strategic Benefits ( $\alpha = 0.802$ ) have a reliability coefficient greater than 0.70. Thus, these three constructs holds good reliability (refer to Table 3). While Cronbach's alpha is an estimate of construct reliability, Fornell and Larcker (1981) emphasized the reliability of each measurement item (indicator). Squared multiple correlation (SMC) is a measure to estimate indicator reliability. As mentioned in the Table 3, all SMC values are greater than the suggested cut-off of 0.30 (Bagozzi & Yi, 1988).

➤ **Convergent Validity** : Convergent validity is defined as the degrees to which the items in a measurement instrument correlate with items in the measurement instrument that are intended to measure the same construct. Hair et al. (2008) suggested three criteria to ensure convergent validity: standardized factor loading of each individual indicator should be greater than 0.50, the average variance explained value for each construct should be greater than 0.50, and composite reliability (CR) value for each construct should be greater than 0.70. As shown in

**Table 3. Psychometric Properties of the Measurement Instrument**

Factors	Variable	$\lambda$	SMC	AVE	CR	$\alpha$
Construct Skill and Cost Savings	SCB1	0.842	0.709	0.622	0.920	0.917
	SCB2	0.684	0.468			
	SCB3	0.746	0.557			
	SCB4	0.772	0.596			
	SCB5	0.881	0.776			
	SCB6	0.700	0.490			
	SCB7	0.872	0.760			
Technology Benefits	TB1	0.969	0.939	0.750	0.923	0.906
	TB2	0.916	0.839			
	TB3	0.801	0.642			
	TB4	0.763	0.582			
Strategic Benefits	SB1	0.819	0.671	0.584	0.808	0.802
	SB2	0.722	0.521			
	SB3	0.749	0.561			

Note:  $\lambda$  = Standardized path coefficients, SMC = Squared multiple correlations, AVE = Average variance explained, CR = Composite reliability,  $\alpha$  = Cronbach's alpha

the Table 3, the identified factor structure (i.e. measurement model) satisfies all these three requirements. Therefore, this measurement model shows adequate convergent validity.

➤ **Discriminant Validity** : It is a measure to test that the constructs intended to measure different theoretical concepts do not highly correlate with each other. There are two ways to ensure discriminant validity: Pair-wise construct comparison method (Anderson & Gerbing, 1988 ; Bagozzi & Philips, 1982; Bagozzi & Yi, 1988) and comparison of shared variance between factors with the square root of average variance explained by individual factors (Fornell & Larcker, 1981). In pair wise comparison method, we compare all three possible pairs for the three factors separately. For each pair, the chi-square value of the full model was compared with the chi-square value of the collapsed model (one pair of constructs was collapsed). More precisely, in the collapsed model, the model is same as the full model except that one pair of target factors were constrained to have a correlation of 1 (Figure 2).

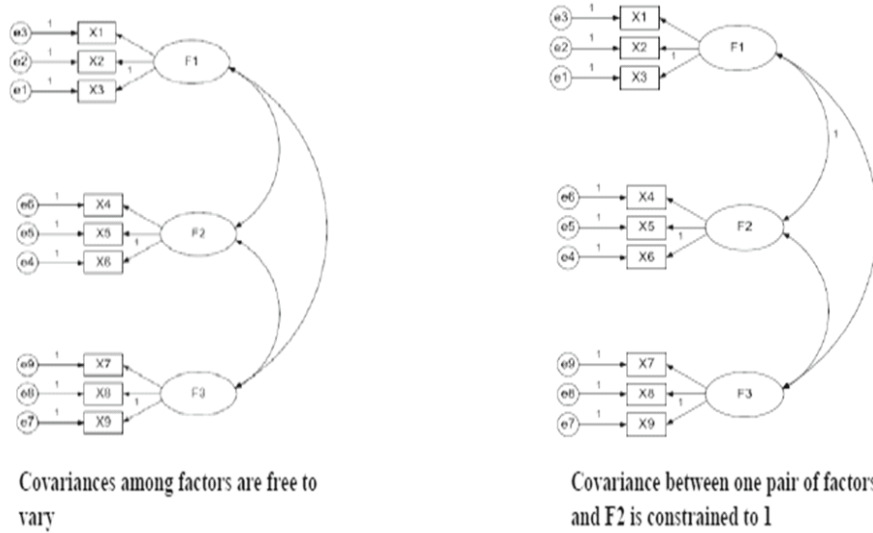
Anderson and Gerbing (1988) suggested that if the collapsed model is significant, and its chi-square value is more than the values of the full model by 4 or more, then the free model reflects a better fit than the collapsed one. This indicates that the collapsed factors are not measuring the same concept and hence increasing the chi-square value, that is, the collapsed factors are discriminant from each other. As shown in the Table 4, for each possible combination of three collapsed models, the chi-square value has increased by more than 4, and hence, all factors are discriminant from each other.

Besides, to ensure discriminant validity, Fornell and Larcker (1981) recommended the comparison of correlations among constructs with the square-root value of average variance explained. They suggested that to achieve discriminant validity, the diagonal value should be greater than the non-diagonal value. As is clearly depicted in the Table 5, all three factors are different from each other.

Given the acceptable convergent validity and discriminant validity, the estimation of structural relationships then constitute an assessment of nomological validity (Cronbach & Meehl, 1955). As shown in the Table 6, the path model also fits well with the chi-square value of 0.807 and degree of freedom 1. As depicted in the table 6, all model fit indices are well meeting the acceptable threshold value of indices for model fit as suggested by Anderson



**Figure 2. Discriminant Validity**



**Table 4. Pair-Wise Construct Comparison for Discriminant Validity**

Model	$\chi^2$ Value (df)	$\Delta\chi^2$ value	$\Delta df$	$\Delta\chi^2 / \Delta df$
Original full model	141.276 (74)	-----	-----	-----
SCB and TB	180.923 (75)	39.647	1	39.647
SCB and SB	163.762 (75)	22.486	1	22.486
TB and SB	179.312 (75)	38.036	1	38.036

Note: SCB = Skill and Cost Benefits, TB = Technological Benefits, SB = Strategic Benefits

**Table 5. Comparison of Inter-Construct Correlation for Discriminant Validity**

Construct	SCB	TB	SB
SCB	<b>0.789</b>		
TB	0.586	<b>0.866</b>	
SB	0.651	0.631	<b>0.764</b>

Note: SCB = Skill and Cost Benefits, TB = Technological Benefits, SB = Strategic Benefits

**Table 6. Model Fit Statistics for Path Model**

Model fit Index	Recommended Value*	Measurement Model
Chi-square to degree of freedom ratio (CMIN/df)	3.000 or below	0.807
Goodness of fit index (GFI)	0.900 or above	0.997
Adjusted goodness of fit index (AGFI)	0.900 or above	0.974
Normed fit index (NFI)	0.900 or above	0.998
Incremental fit index (IFI)	0.900 or above	1.000
Comparative fit index (CFI)	0.900 or above	1.000
Root mean square residual (RMR)	0.100 or below	0.009
Root mean square of error approximate (RMSEA)	0.070 or below	0.000

\*Recommended values as suggested by Anderson and Gerbing (1988) and Hair et al. (2008)

**Table 7. Results of Hypothesis Testing**

Hypothesis	Hypothesized Relationship	Path Coefficient	Result
H1	Technological Benefit → Strategic Benefit	0.617***	Supported
H2	Technological Benefit → Skill and Cost Benefit	0.526***	Supported
H3	Technological Benefit → Overall Benefit	0.101 (0.069)	Not Supported
H4	Strategic Benefit → Skill and Cost Benefit	0.263***	Supported
H5	Skill and Cost Benefit → Overall Benefit	0.934***	Supported

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ , ns = not significant

and Gerbing (1988).

As shown in the Table 7, except H3, all hypotheses are supported. The findings indicate that technology benefits have a direct impact on strategic benefits (H1:  $\beta = 0.617$ ,  $p < 0.001$ ) and on skill and cost benefits (H2:  $\beta = 0.526$ ,  $p < 0.001$ ), but have a non-significant impact on overall organizational benefits (H3:  $\beta = 0.101$ ,  $p = 0.069$ ). Strategic benefits have a significant impact on skill and cost benefits (H4:  $\beta = 0.263$ ,  $p < 0.001$ ). Also, skill and cost benefits have a significant impact on overall organizational performance (H5:  $\beta = 0.934$ ,  $p < 0.001$ ). However, path coefficients suggest that technology benefits have a non-significant direct impact on overall organizational performance (H3:  $\beta = 0.101$ ,  $p = 0.069$ ), and it has an indirect impact of 0.643 on overall organizational performance ( $= 0.617 * 0.263 * 0.934 + 0.526 * 0.934$ ).

The total effect of technology benefits on overall organizational performance is 0.643 (same as the indirect impact because the direct impact is non-significant). Similarly, the indirect effect (also total effect) of strategic benefits on overall organizational performance is 0.246 ( $= 0.263 * 0.934$ ).

## Discussion

The study focused on finding out the drivers for IT outsourcing in the commercial banks in India. Based on the data collected from the respondents of major commercial banks, the important factors that influenced the IT outsourcing decisions of the banks were identified. We could not pinpoint any single factor that influenced their decisions, but a multiplicity of various motivations from the outsourcing benefits motivated the managers. Both technology and strategic (business) factors influenced the banks' decisions to go for IT outsourcing. The most important factors that influenced the IT outsourcing decisions of banks were access to vendor's expertise, that is, Construct Skill and Cost Savings. Cost savings included two items, namely, (a) saving of capital expenditure that would be incurred towards setting up IT infrastructure, and (b) cost saving on IT operations due to low cost technology solutions offered by the vendor. The other important drivers are: Technology Benefits and Strategic Benefits. Also, we found that variables like "Avoid staff headache," "Improvement in customer service," and "Meet new demands of the customers" also influenced the IT outsourcing decisions of banks.

One of the most important findings of this study is that though technology benefit is a major driver of IT outsourcing in banks, it does not lead to overall benefits for the organization. In the eyes of the managers, overall IT outsourcing benefits are mainly due to skill and cost benefits associated with outsourcing. Managers attach more importance to vendor's skill and cost savings while deciding IT outsourcing rather than technology benefits. Our findings are in line with the findings of earlier researchers - that IT outsourcing in banks is influenced by strategic benefits (Gulla & Gupta, 2012) and cost savings (Suhaimi et al., 2007). At the same time, it also explains how strategic benefits and cost benefits are related to overall IT outsourcing benefits in banking organizations in India.

## Implications

✎ **Research Implications :** It is expected that outsourcing activities in banks will increase in future and banks should give due emphasis to the drivers of IT outsourcing mentioned in this study. The study results indicate that there is a significant relationship between strategic benefits and skill & cost benefits ; technology benefits and strategic benefits ; and technology benefits and skill & cost benefits. Furthermore, it has established that technology benefits do not have a direct relationship with overall organizational benefits. The study results, when viewed from a bank manager's context, offer significant insights. Managers, per se, look for improvement in performance of the organization, and technology is used as a means to achieve this objective. Thus, the driver for technology benefits in banks is for gaining access to strategic benefits and skill & cost benefits.

✎ **Managerial Implications :** Till date, hardly any extensive study has been conducted assessing the extent of IT outsourcing in the banking sector in India. This study offers some helpful implications for managers in implementing IT outsourcing in their respective organizations. It is a fact that banks in India are increasingly using IT outsourcing. This is evident from the reports of Reserve Bank of India (2011)<sup>1</sup> and the Indian Banks' Association (IBA, 2009). But no such study was available that could establish the factors motivating the banks to go in for IT outsourcing in India. Thus, the present study will be an important extension of literature on outsourcing. Therefore, it is appropriate to determine the factors influencing the IT outsourcing in banks.

This present study empirically confirms that outsourcing of IT activities to third parties will result in a range of benefits to banks, like focus on core activities, cost savings, access to state-of-the-art technology, access to scarce resources, better service to consumers, reduction of time spent on marketing of products and services, and other strategic benefits. This study is important for researchers and professionals associated with the banking sector and gives a new direction for organizational growth.

Information technology and business performance need to supplement each other for achieving business goals by banks through the use of IT. Bankers feel that by improving their IT performance, they can improve their business performance, and both the factors are significant for them. The findings of the study will be helpful for the bank managements in better understanding their outsourcing decisions.

## Limitations of the Study and Scope for Further Research

Future research can validate the existing drivers of IT outsourcing in banks and explore new outsourcing drivers in due course considering the increased growth of outsourcing activities in the Indian banking sector. Though technology benefits do not have a significant impact on overall organizational performance, as is evident from our study, it could not be statistically established considering the exploratory nature of the methodology used. Future researchers may confirm this claim. Considering the exploratory nature of the study, we used a small sample. The generalization of the study can be better enhanced by conducting studies with an increased sample size. The research could also be extended to other outsourcing activities in banks to establish whether the same factors hold good for other types of outsourcing activities.

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