

## Knowledge Sharing Role in IT Outsourcing

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### Abstract

Knowledge has emerged as a strategically significant resource to organization. In recent studies, there has been much interest in knowledge sharing between service receiver and service provider through an outsourcing partnership and its effect on information technology (IT) outsourcing success. Besides the frequent cited reasons of economic and technological benefits for IT outsourcing there is a growing concern of organizations evaluating its success or activity involved in IT outsourcing. Knowledge sharing is considered as one of the major motives of outsourcing partnership based on trust to ensure partnership quality. This study examines the relationship between knowledge sharing and IT outsourcing success. We argue that knowledge sharing is positively associated with IT outsourcing success. This paper further reports on the ongoing empirical work conducted on both public and private organizations in Malaysia that have outsourced their IT functions. We seek to investigate the issue of knowledge sharing from the service receivers' perspective. It is anticipated that our research will elucidate the importance of knowledge sharing for both practitioners and knowledge management researchers, lens on IT outsourcing.

### Keywords

Knowledge Management, Knowledge Sharing, Partnership Quality, Information Technology Outsourcing Success.

## **1. INTRODUCTION**

The 1989 Kodak and DEC successful outsourcing relationship created the wave of IT outsourcing phenomena. Ever since then many large corporations are treating IT as a commodity service, opting from a focus on internal development of information systems to external partnership and alliances (Kern and Willcocks, 2000, Kakabadse, N and Kakabadse, A. 2000). This bandwagon effect definitely shaped the spending on IT outsourcing services as it has reached over USD60 billion in 2001 and is expected to grow by a 5 year compound average growth rate (CAGR) of 12% (Computerworld Malaysia, 2003). In Malaysia, International Data Corp (IDC) reports the local companies' expenditures on outsourcing their ICT management services reached US\$89 million (RM338 million) in 2001 (Manecksha, 2003). It forecasted that with a compound annual growth rate of 15%, the amount is expected to be US\$164 million by the year 2005. Malaysia can expect to attract at least RM11.4 billion of the global outsourcing business that is projected to be worth RM1.9 trillion by 2008, briefs Price Waterhouse Coopers (Cheong, 2003).

The word 'outsourcing' has been described as an act of predetermined subcontracting part or all a company's IT function to one or more external vendors (Sengupta & Zviran, 1997). The underlying concept of IT outsourcing is the acquisition of services and/or products, through continuous interactions between parties to the agreement; may it be temporary or designated within an agreed length of time (Hirschheim and Lacity, 2000).

Malaysia is no exception to IT outsourcing. Increasingly, Malaysia's private sector and the government are seeing a rising trend in engaging into IT outsourcing relationships especially involving significant amount of deals. Some examples of large local IT

outsourcing contracts in the private sectors include RM1.3 billion Maybank deal, the RM440 million Malaysian Airline System Bhd (MAS) deal, and Permodalan Nasional Bhd. (PNB) RM32 million extension contract (The Star, 2003). These large outsourcing deals are also sparked by Bank Negara Malaysia (BNM). As an effort to strengthen Malaysian banking industry following the 1997 financial crisis, BNM had directed local banks to merge and to form only ten anchor banks (Muzaffar Shah, 2002). In the Financial Master Plan revealed in 2001, BNM encourages banks to outsource their non-core back office and IT processes to enhance their internal efficiency and enable them to focus on selling and marketing financial services products.

Taking cue from the private sector, outsourcing move is seen as a favorable alternative for the Government. Interest in IT outsourcing is on the rise among Government agencies riding on high public expectations while finances are limited and skilled resources are scarce, this according to analysts and industry observers (Kasim, 2005). In the recent 2005 Budget, a sum of RM500 million has been allocated for infrastructure outsourcing projects especially in the education and health sectors. Among the early Malaysian government's large-scale systems integration projects in 1990s were POS Malaysia Berhad, Amanah Saham Nasional Berhad and Permodalan Nasional Berhad (PNB) (Mohammad, 2003). These massive computerization projects were outsourced to one of Malaysia's leading total ICT solution and service provider. Other IT outsourcing project includes the Malaysian Smart Schools, which was awarded to Telekom Malaysia Consortium (EDS Release, 1999), and the Generic Office Environment (GOE) project which was awarded to Electronic Data Services (EDS) Malaysia. Despite these experiences, Beulen, E., Ribbers, P. (2003) concluded that generally, Asia's level of experience with the management of IT outsourcing is low compared to the rest of the world.

The magnitude of deals involved in IT outsourcing has established concern with ensuring successful outsourcing relationship between service receivers and service providers. It has been indicated that one particular factor that can contribute to successful outsourcing relationship is knowledge sharing (Lee and Kim, 2003). Accordingly, knowledge sharing becomes a factor to gain and sustain a competitive advantage, and improved business performance (Choi and Lee, 2003). Knowledge sharing is not merely a neutral exchanged of information but it affects working relationships, distribution of power, patterns of influence and alters how individual define their responsibilities (Willet, 2002).

This study explores the service receiver and service provider relationship and provides and anticipates the best relationship to strike in determining a successful IT outsourcing partnership. Although there may be many factors involved in influencing IT outsourcing success, this study focuses only on 'partnership' domain in examining knowledge sharing.

## **2. LITERATURE REVIEW**

Grover *et.al.* (1996) suggested current IT outsourcing nature has evolved in the following ways: (i) larger companies are indulging outsourcing; (ii) a greater range and depth of services are involved; (iii) service provider are agreeing to more responsibility and risk-taking; (iv) more functional outsourcing occurring; and (v) the nature of relationship with service provider is changing. Among the major trends in outsourcing, the change of relationship between the clients and the service providers is the most imperative (Levina and Ross, 2003). The nature of outsourcing has evolved from merely

a relationship of customer and vendor, to a partnership relationship in accordance to achieve goals of participants.

In recent studies, there has been much interest in knowledge sharing through outsourcing partnership and its effect on outsourcing success (Sengupta and Zviran, 1997, Lee, 2001). However, knowledge sharing among different organizations is not an easy alliance. Nonaka and Takeuchi (1995) notes that knowledge sharing is based on organizational context, and thus knowledge cannot be easily transferred among organization with different cultures, structures and goal. Hence, a successful knowledge sharing in an outsourcing partnership, both the service receiver and service provider must congregate to a strategic partnership and do not act opportunistic (Lee and Kim, 1999). This indicates the importance of knowledge sharing in building a successful partnership to reap benefits through outsourcing practices.

Many researchers reported that closer relationships result from more frequent and relevant knowledge exchanges among high performance partners. Partnerships can create a competitive advantage through strategic sharing of organizations' key information (Probst *et al.*, 2000).

In a case study, Beulen and Ribbers (2003) examined an Asian IT outsourcing partnership in the discrete manufacturing industry. The findings of this exploratory research confirm that knowledge sharing is essential in managing IT outsourcing relationships.

Choi and Lee (2003) study done on service industry explored the relationship between knowledge management styles and industry types. Questionnaires were administered to

middle managers. Their findings strengthen the argument that knowledge management dynamic style integrating explicit with tacit-oriented methods is found to improved business performance.

Lee (2001) conducted a survey on public sector organizations in Korea. He concluded that knowledge sharing is significantly associated with the degree of attainment of outsourcing benefits. The ability of the service receiver to absorb the needed knowledge has a significant direct effect on attaining benefits.

### **3. RESEARCH OBJECTIVES and KEY VARIABLES**

The basic model studied the relationship between knowledge sharing and outsourcing success, focus on the service receiver perspective.

#### **3.1 Knowledge Sharing**

Literature review on knowledge management revealed two forms of knowledge, namely tacit and explicit. Tacit knowledge, as defined by Nonaka and Takeuchi (1995), is highly personal, hard to formalize, difficult to communicate or share with others. Explicit or codified knowledge on the other hand, refers to knowledge that is transmittable in formal, systemic language. Shared knowledge is defined as extend to which critical or propriety information is communicated between partners (Willett, 2002; Lee and Kim, 1999, 2003). Therefore, increasing attention is paid to how organizations learn from their partners and develop new competencies through strategic alliances. Lee (2000) defines knowledge sharing as activities of transferring or disseminating knowledge from one person, group or organization to another. Crofts and Swatman (2002), affirms that outsourcing lead to loss of organization knowledge. Outsourcing total information system operation may lose

irreplaceable tacit, cross-functional knowledge pertaining to the mind of professional system analyst. Hence, knowledge sharing is considered one of the dimensions of partnership quality associated with IT outsourcing.

### **3.2 IT Outsourcing Success**

IT outsourcing success is the dependent variable to be explored, which is not easy to measure. Researchers have investigated the success of information technology in myriad ways (Garrity and Sanders, 1998). Lee and Kim (2003) defined outsourcing success as 'the level of fitness between the service receiver requirements and outsourcing outcomes delivered by the service provider'. Three strategies are commonly cited in attaining optimal IT outsourcing success though the focus may varies from one company to another (Grover *et al.*, 1996; Lee and Kim, 1999; Lee, 2001; Lee and Kim, 2003).

In view of the lack of empirical studies examining IT outsourcing success in the Malaysian context and further identify the role of knowledge sharing in IT outsourcing practices among Malaysian organizations, such a study is thus timely. Hence, we hypothesize:

*H1: Knowledge sharing is positively associated with IT outsourcing success.*

## **4. MEASURES**

A questionnaire based on previous literature was developed. A multiple-item method was used and each item was measured on a seven-point Likert scale from 'strongly disagree' to 'strongly agree'.

In this study, knowledge sharing is defined as activities of transferring or disseminating knowledge from one person, group or organization to another with broadly includes tacit and explicit knowledge (Lee and Kim, 1999; Lee, 2001). Four items from Lee and Kim (1999) and Lee (2001) were used to operationalize knowledge sharing. These measures were adopted due to high reliability in previous studies. Table 1 depicts knowledge sharing measures.

**Table 1: Measurements of Knowledge Sharing**

1.	Share business knowledge of core business processes
2.	Exchange information that help the establishment of business planning
3.	Share environmental information that affects each other's business.
4.	Share each other's know-where, know-whom and know-how.

IT outsourcing success measure of this study refers to the overall organizational advantage obtained from organizations outsourcing their IT functions. There are two constructs of IT outsourcing success, namely net benefits and service quality. Outsourcing is motivated by the strategic, economic and technological benefits (Grover *et al.*, 1996; Lee and Kim, 2003). To capture these advantages of outsourcing Grover, Cheon and Teng (1996) 's instrument was adopted to access the degree of achieving strategic, economic and technological benefits of outsourcing. Ten items were adapted to operationalize net benefits (strategic, economic and technological benefits). Grover and Teng's instrument had been widely used by researchers and hence this instrument was a valid and acceptable measure for the net benefits constructs.

In view of the changes in the role of IT environment such as IT outsourcing, DeLone and McLean (2003) recommend that service quality be added as an important dimension of

IT outsourcing success. Jiang *et al.* (2003) offered a method for quantifying a measure of service quality that includes both the user and the IT service provider perspective. Hence, in addition, service quality measures were adopted from Jiang *et al.* (2002, 2003) for this study. There are five dimensions used by service receivers to evaluate most type of services. Other researchers had validated this instrument. Table 2 depicts the measures for IT outsourcing success.

Besides the above items, demographic factors on respondent profile (age, gender, educational level, job hierarchy, length of working experiences and duration of handling outsourced IT functions) and company profile (organization primary industry, size, percentage IT functions outsource, drivers for outsourcing, type of outsourcing relationship, type of IT function outsourced, type of service provider and approach used by service provider) were also measured.

**Table 2: Measurements of IT Outsourcing Success.**

Net Benefits	Strategic Benefits	<ol style="list-style-type: none"> <li>1. Able to refocus on core business.</li> <li>2. Increased control of IT expenses.</li> <li>3. Satisfied with overall benefits from outsourcing.</li> </ol>
	Economic Benefit	<ol style="list-style-type: none"> <li>1. Enhanced economics of scale in human resources.</li> <li>2. Enhanced economics of scale in technological resources.</li> <li>3. Increased control of IT expenses.</li> <li>4. Able to manage cost structure through unambiguous contractual arrangements.</li> </ol>
	Technological Benefits	<ol style="list-style-type: none"> <li>1. Able to reduce the risk of technological obsolescence.</li> <li>2. Increased access to key information technologies.</li> </ol>
Service Quality	Tangibles	<p>The service provider</p> <ol style="list-style-type: none"> <li>1. Has up-to-date hardware and software.</li> <li>2. Physical facilities are visually appealing.</li> <li>3. Employees are well-dressed and neat in appearance.</li> <li>4. The appearance of the physical facilities of the IT unit is in keeping with the kind of services provided.</li> </ol>
	Reliability	<ol style="list-style-type: none"> <li>1. When service provider promises to do something by a certain time, they do.</li> <li>2. when users have a problem, service provider shows sincere interest in solving it.</li> <li>3. Service provider is dependable.</li> <li>4. Service provides services at the times they promise.</li> <li>5. Service provider insists on error-free records.</li> </ol>
	Responsiveness	<p>Service provider</p> <ol style="list-style-type: none"> <li>1. Tells users exactly when services will be performed.</li> <li>2. Gives prompt service to users</li> <li>3. Is always willing to help users.</li> <li>4. Is never too busy to respond to users' request.</li> <li>5. Respond to users' need at their own disposal.</li> </ol>
	Assurance	<ol style="list-style-type: none"> <li>1. The behavior of service provider instills confidence in users.</li> <li>2. Users will feel safe in their transaction with the service provider.</li> <li>3. Service provider is consistently courteous.</li> <li>4. Service provider has the knowledge to do their jobs well.</li> </ol>
	Empathy	<p>The service provider</p> <ol style="list-style-type: none"> <li>1. Gives users individual attention.</li> <li>2. Has operation hours convenient to all.</li> <li>3. Assigns employees who give users personal attention.</li> <li>4. Has the user's best interest at heart.</li> <li>5. Understands the specific needs of the users.</li> </ol>

## **5. SAMPLE and DATA COLLECTION**

In this study, the unit of analysis is organizational level. Organizations comprise of corporations, business units, subsidiaries or divisions served by service providers (Grover *et al.*, 1996). We used cross-sectional survey research method. A sampling frame was developed from Small and Medium Industries Development Corporation (SMIDEC) (50), Bursa Malaysia (82), Federation of Malaysian's Manufacturers (464), Malaysian Companies Directory (185) and Malaysian Civil Service Link (MCSL) (129). The targeted respondents were IT managers or IT project managers running the outsourced IT projects of both public and private organizations located in the Klang Valley.

A total of 910 questionnaires were mailed during the first week and third week of April 2005. In order to increase response rate, cover letters, personalized addresses and self-address return envelopes were provided. From the 910 questionnaires distributed, to date 145 questionnaires were returned after duration of four weeks, which yielded about 15.9 % response rate. 32 questionnaires indicated that their companies do not practice IT outsourcing. Ten questionnaires were returned with no responses from unknown respondents. At this point in time, 91 responses were used for data analysis. Data collection is in progress and expected to be completed by mid June, 2005.

## **6. ANALYSIS**

### **6.1 Sample characteristics**

The sample was analyzed using SPSS for Windows, Version 12.0. The descriptive statistics of the responding organizations are shown in Table 3. It summarizes the respondent characteristics in terms of primary industry, number of employees, existence

of IT department, percentage of IT functions being outsourced, type of outsourcing relationship, type of service provider engaged with and approach used by service provider. Majority of the primary industry are government agencies. 82.4 % have more than 150 employees indicating organizations are large-sized. Seventy-nine organizations have IT departments. Table 4 depicts twenty-six organizations (28.6%) outsourced 20% of their IT functions against 16 organizations (17.6%) that outsource more than 80% of their IT functions. Forty-nine organizations (53.8%) engaged in selective outsourcing. Most of the organizations (87.9%) outsource their IT functions to local service providers. 64.8 % of the service providers practice single term approach in implementing their services to service receivers.

**Table 3: Company Profile**

Characteristic	Item	Frequency	Percent
Primary Industry	Government Agency	43	47.3
	Bank / Financial Institution / Insurance		
	Company	8	8.8
	Telecommunications / Network Services	1	1.1
	Education	6	6.6
	Manufacturing	12	13.2
	Others	21	23.1
	Total	91	100
	Employees	Less than 50	6
51 – 149		10	11.0
above 150		75	82.4
Total		91	100
IT Department	Yes	79	86.8
	No	12	13.2
	Total	91	100

Table 4 further depicts and explains the descriptive statistics of the sample comparing government and non-government organizations. Government agencies showed a higher percentage (94.1%) of in-house IT departments as compared to non-government agencies (77.5%). Non-government organizations registered 37.5% minimal outsourcing (outsourcing below 20% of their IT functions) as compared to government agencies of 21.6%. Selective outsourcing (outsourcing between 20% and 80% of their IT functions) is preferred, as government statistics reflected 56.8% while non-government organization registered 50%. The findings is in line with an extensive study on selective versus total outsourcing decisions conducted by Lacity *et. al.* (1994). They concluded that selective outsourcing is preferred because it is more controllable. Total outsourcing is only successful if there is a tight and well-monitored contract or agreement between the sourcing firms and the external parties. Bowen and LaMorica (1998) reaffirmed that most organizations opt for selective outsourcing to minimize overall IT management burden, while retaining control of strategic decision-making.

Findings showed that both government (70.5%) and non-government (72.5%) employed multi vendor outsourcing relationships. Both government and non-government organizations showed preference for local service providers, with 80.2 % for government and 85% for non-government, with single team approach during implementation which showed 62.7% and 67.5% respectively.

**Table 4: Comparison of Government and Non-Government Organizations**

Characteristic	Item	Government		Non Government	
		Frequency	Percentage	Frequency	Percentage
IT Department	Yes	48	94.1	31	77.5
	No	3	5.9	9	22.5
	Total	51	100	40	100
Outsource Percentage	1 – 10 percent	4	7.8	10	25.0
	11 – 20	7	13.8	5	12.5
	21 – 30	7	13.8	7	17.5
	31 – 40	3	5.8	2	5.0
	41 – 50	6	11.8	4	10.0
	51 – 60	4	7.8	2	5.0
	61 – 70	3	5.8	3	7.5
	71 – 80	6	11.8	2	5.0
	81 – 90	8	15.8	3	7.5
	91 – 100	3	5.8	2	5.0
Total	51	100	40	100	
Outsourcing Relationship	Simple Outsourcing	13	25.5	10	25.0
	Multi-Vendor	36	70.5	29	72.5
	Co-Sourcing	1	2.0	0	0
	Complex	1	2.0	1	2.5
	Total	51	100	40	100
Service Provider Type	Local	46	88.2	34	85
	Multinational / Global	5	11.8	6	15
	Total	51	100	40	100
Approach	Single Team	32	62.7	27	67.5
	Multiple Team	19	37.3	13	32.5
	Total	51	100	40	100

## 6.2 Descriptive Statistics of Independent and Dependent Variables

Descriptive statistics depicted in Table 5 describes the knowledge sharing variable with its four items displaying its central tendency and variability. Table 6 shows the mean of knowledge sharing and IT outsourcing success. Generally, IT managers' belief that knowledge sharing is important in their organization (mean=4.9808, SD = 1.05). Also, generally IT managers' belief that IT outsourcing success is important in the organization (mean = 5.0196, SD = 0.76571).

**Table 5: Descriptive Statistics for Items of Independent Variable**

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Service provider share business knowledge	91	2.00	7.00	5.0989	1.18373	1.401
Service provider share environmental info	91	1.00	7.00	4.9011	1.24771	1.557
Service provider exchange information , help in business planing	91	2.00	7.00	5.0220	1.11533	1.244
Service provider share each other's know-how & know-whom	91	2.00	7.00	4.9011	1.16481	1.357
Valid N (listwise)	91					

**Table 6: Mean of Independent Variable and Dependent Variables**

	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge Sharing	91	2.00	7.00	4.9808	1.04896
IT Outsourcing Success	91	2.48	6.52	5.0196	.76571
Valid N (listwise)	91				

## 6.3 T-Test for Two Unrelated Means

T-test is conducted to determine if the means of government and non-government samples differ.

**Table 7 : Independent Sample Test**

**Group Statistics**

	Type of sector	N	Mean	Std. Deviation	Std. Error Mean
Knowledge Sharing	Government	51	5.1225	1.03486	.14491
	Non Government	40	4.8000	1.05186	.16631

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
KS	Equal variances assumed	.038	.845	1.465	89	.146	.32255	.22015	-.11488	.75998
	Equal variances not assumed			1.462	83.262	.147	.32255	.22059	-.11617	.76127

In relation to knowledge sharing as shown in Table 7, Levene's test was not significant and thus we interpret the equal variance estimates. Consulting out t-value, df and two-tail significant, again no significant differences are apparent ( $p > .05$ ). Thus, there is no significant difference in knowledge sharing between government and non-government,  $t(89) = 1.465$ ,  $p > .05$ . Alternatively, the t-value is 1.465 with 89 degree of freedom. A probability of 0.1465 indicates there is no significant difference in the two groups.

**6.4 Reliability of Constructs**

Table 8 and Table 9 summarize the number of items and the results of reliability tests for knowledge sharing and IT outsourcing success variables. The internal consistency

measures (Cronbach's alpha) were obtained in order to assess the reliability of the measurement instruments.

**Table 8: Cronbach's alpha for Knowledge Sharing Measures**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.912	.913	4

The Cronbach's alpha for knowledge sharing is 0.912, as shown above in Table 8. The generally agreed upon lower limit for Cronbach's alpha is 0.70 (Hair *et al.*, 1998). Thus we conclude that knowledge sharing is reliable. Table 9 depicts the consistency of the entire scale of IT outsourcing success measures. The Cronbach's alpha reads 0.956. Thus, we conclude that IT outsourcing success measures are also reliable.

**Table 9: Cronbach's alpha for IT Outsourcing Success Measures**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.956	.956	33

We checked for normality of the distribution of data. The Kolmogorov- Smirnov statistic with a Lilliefors significance level is produced. Since the significance level is greater than 0.05, then normality is assumed. Test of normality for government agencies registered at 0.066 for government agencies. Normality statistics were obtained at 0.103 for non-

government organizations. This confirms there is no violation of assumption for correlation analysis.

### 6.5 Results of Correlation Analysis

In order to support our hypothesis, a simple bivariate correlation was carried out. A Pearson-product-moment correlation coefficient describes the relationship between knowledge sharing and IT outsourcing success.

**Table 10: Correlations of Knowledge Sharing / Success for Government Agencies**

		Knowledge Sharing	SUCCESS
Knowledge Sharing	Pearson Correlation	1	.462(**)
	Sig. (2-tailed)	.	.001
	N	51	51
SUCCESS	Pearson Correlation	.462(**)	1
	Sig. (2-tailed)	.001	.
	N	51	51

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 10 shows that there is a significant positive correlation between IT outsourcing success and knowledge sharing ( $r = .462$ ,  $p < .001$ ) for government agencies. Since Pearson's  $r$  is 0.462, this would indicate a modest positive relationship between the two variables.

**Table 11: Correlations for of Knowledge Sharing / Success Non-Government Organizations**

		Knowledge Sharing	SUCCESS
Knowledge Sharing	Pearson Correlation	1	.344(*)
	Sig. (2-tailed)	.	.030
	N	40	40
SUCCESS	Pearson Correlation	.344(*)	1
	Sig. (2-tailed)	.030	.
	N	40	40

\* Correlation is significant at the 0.05 level (2-tailed).

Table 11 depicts that there is a significant positive correlation between IT outsourcing success and knowledge sharing ( $r=.344$ ,  $p<.001$ ) for non-government agencies. Since Pearson's  $r$  is 0.344, this would indicate a low positive relationship between the two variables.

Thus, we conclude that government and non-government organizations, have significant positive correlation between knowledge sharing and IT outsourcing success. However,  $r$  of 0.462 for government agencies is larger than  $r$  of 0.344 for non-government organizations. This leads to next stage of summarizing the relationship between the two variables.

## 6.6 Results of Linear Regression

Regression analysis was conducted to summarize the nature of relationship between variables and making predictions of likely values of the dependent variables (Bryman and Cramer, 2002). Simple linear regression was conducted on government (refer to Table 12) and non-government organizations (refer to Table 13).

**Table 12: Linear Regression of Knowledge Sharing on Government Organizations**

**Model Summary(b)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.462(a)	.213	.197	.75461

a Predictors: (Constant), KS

b Dependent Variable: SUCCESS

**ANOVA(b)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.572	1	7.572	13.296	.001(a)
	Residual	27.903	49	.569		
	Total	35.474	50			

a Predictors: (Constant), KS

b Dependent Variable: SUCCESS

**Coefficients(a)**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.256	.539		6.044	.000
	Knowledge Sharing	.376	.103	.462	3.646	.001

a Dependent Variable: SUCCESS

Referring to the tables above, regression equation is  $\text{success} = 3.26 + 0.38\text{KS}$ . This implies that for every increment of knowledge sharing, success increases by 0.38. Coefficient of determination,  $r^2$ , which is 0.213 implies that 21.3 percent of the variance in success is explained by knowledge sharing. Its significance is indicated by the F-value of 13.296. Thus we conclude, knowledge sharing predicts IT outsourcing success  $F(1, 49) = 13.296, p < .05$  for government organizations.

**Table 13: Linear Regression of Knowledge Sharing on Non-Government Organizations**

**Model Summary(b)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.344(a)	.118	.095	.72566

a Predictors: (Constant), KS

b Dependent Variable: SUCCESS

**ANOVA(b)**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.681	1	2.681	5.091	.030(a)
	Residual	20.010	38	.527		
	Total	22.691	39			

a Predictors: (Constant), KS

b Dependent Variable: SUCCESS

**Coefficients(a)**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.839	.543		7.075	.000
	Knowledge Sharing	.249	.110	.344	2.256	.030

a Dependent Variable: SUCCESS

Based on Table 13, the regression equation:  $\text{success} = 3.84 + 0.25\text{KS}$ . This implies that for every increment of knowledge sharing, success increases by 0.25. Coefficient of determination,  $r^2$ , which is 0.118 implies that 11.8 percent of the variance in success is explained by knowledge sharing. Its significance is indicated by the F-value of 5.091. Thus, we conclude that knowledge sharing predicts IT outsourcing success  $F(1, 38) = 5.091, p < .05$  for non- government organizations.

Based on the results from the regression analysis, we conclude that knowledge sharing significantly predicts IT outsourcing success for both government and non-government organizations.

**7. DISCUSSION and CONCLUSION**

The objective of this study was to investigate the impact of knowledge sharing on IT outsourcing success. In our survey on IT outsourcing practices amongst Malaysian

organizations, we demonstrated that the early analysis indicates support for the proposition that knowledge sharing is positively associated with IT outsourcing success. The results of this study indicated that knowledge sharing is significantly associated with the attainment of IT outsourcing success, both for the government and non-government organizations. More specifically, the empirical results supports the hypothesis put forward. With respect to partnership quality, result indicates that knowledge sharing is an important variable for outsourcing success. Our study supports the previous study conducted by Lee (2001), Choi and Lee (2003) and Beulen and Ribbers (2003). This confirms the widely held belief that knowledge sharing is one of the predictors for IT outsourcing success.

The significance of this study is to add upon empirical study in Malaysian context between knowledge sharing and IT outsourcing success in relation to government organizations and non-government organizations. Secondly, is to provide information that can be used by stakeholders to extend their understanding in IT outsourcing success and promoting positive managerial values like adopting knowledge sharing strategies toward contributing outsourcing success. Third, this study has refined and validated existing outsourcing success and knowledge sharing instruments in the IT outsourcing environment.

This study is not without limitations. One limitation of this study was that the knowledge sharing was only viewed from the service receivers' perspective. Knowledge sharing should also been investigated from the service providers' perspective however, to a significant extend knowledge is transferred and gained during the duration of alliance. Alternatively, these limitations can be considered to be suggestions for future research.

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