

The Relationship between the Perceived Threat from Information Technology Outsourcing and Job Satisfaction of Information Technology Professionals

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Abstract

This study examines the relationship between the perceived threat of information technology (IT) outsourcing and the job satisfaction of information technology professionals. As corporations intensify their outsourcing activities, incumbent IT professionals are naturally affected in the process. IT professionals who perceived IT outsourcing as a significant threat to their job security reported lower perceived job satisfaction compared to their peers who did not have the same perception. The study also found a significant relationship between the perceived involvement in the IT outsourcing arrangement and job satisfaction as well as a significant relationship between perceived outsourcing outcome and job satisfaction. The implications of these findings are discussed in the post-analysis section.

Keywords: Information technology outsourcing, job satisfaction, ICT management, information systems issues.

1. Introduction

Today, information technology (IT) is used extensively in many organizations. As the evolution of IT continues at breathtaking speed, organizations are increasingly dependent on IT professionals to maintain their IT infrastructure and support their IT requirements. In recent years, organizations have increasingly looked to outsourcing the IT function as a means to improve competitiveness and address various existing information technology issues [17]. In 2002, J.P. Morgan Chase announced a \$5 billion IT outsourcing deal with IBM [56]. More recently, in 2006, Electronic Data Systems (EDS) won a three-year extension worth \$3.1 billion for outsourcing services provided to the United States Navy Marine Corps Intranet [24], while IBM won an IT outsourcing contract from the Australian Customs Services worth AUD 160 million in 2007. This year, lawmakers in the Belgian government announced the award of a contract worth approximately euro 582 million to EDS-Telindus, the largest outsourcing contract awarded to date in Belgium [43].

IT outsourcing is the delegation of internal IT-related jobs to external vendors [3] and it has become one of the fastest growing areas in the

IT services segment. According to the Gartner Group [22], IT outsourcing and business process outsourcing was the fastest-growing service line in the financial services sector. In 2007, information technology outsourcing achieved a respectable growth rate of 10.2% [23]. While proponents of IT outsourcing tote the many benefits realized through outsourcing, less is heard about the impact of IT outsourcing on the people working in the organization, in particular, IT professionals. A review of literature indicates that there have not been many studies undertaken to determine the perceived threat of IT outsourcing and how this perceived threat impacts the job satisfaction of IT professionals. Even with outsourcing, the organization's incumbent IT professionals remain important as people that understand the organization's processes and culture [17].

In this paper, a review of the factors influencing job satisfaction is discussed with an emphasis on how IT outsourcing can impact job satisfaction. Previous research has indicated how some variables such as age and gender can influence the perceived job satisfaction [11, 12, 32, 40, 54]. Other researchers have proposed variables such as threat and coworkers as antecedents to job

satisfaction [8, 57]. Not many studies have focused on the influence of outsourcing on the job satisfaction of information technology professionals in depth. The contribution of this study is to examine and describe how the perception of outsourcing influences the job satisfaction of IT professionals so that managers, business leaders and all those involved in the organization's outsourcing initiative can achieve outsourcing success while maintaining the job satisfaction levels of the incumbent information technology team and reaping the benefits therein.

The research posed the following questions: (1) What is the relationship between the perceived threat of IT outsourcing with job satisfaction? (2) In organizations that do outsource, how does the job satisfaction levels of IT professionals who perceive IT outsourcing as a threat compare to those who do not perceive IT outsourcing as a threat? (3) Is there a relationship between job satisfaction and perceived involvement in the IT outsourcing arrangement? (4) Does perceived outsourcing outcome influence job satisfaction?

2. Theory

Defining Job Satisfaction

Interest in job satisfaction has been around for quite some time. In 1935, Hoppock [27] associated job satisfaction with psychological, physiological and social factors. In 1976, Locke defined job satisfaction as a "pleasurable emotional state resulting from the appraisal of one's job" [42, p. 1297]. Later definitions of job satisfaction have gravitated towards job satisfaction as an emotional perception [49, 51, 57, 62]. In 2001, Robbins [53] suggested that job satisfaction is related to the difference between the rewards that workers receive and the amount they believe they should receive. Hence, job satisfaction is evaluated both rationally and emotionally as a result of influence from both tangible and non-tangible factors. Job satisfaction is also a complex yet transient perception that is subject to change as interpretation of influences change.

Factors influencing Job Satisfaction

Various factors are known to influence job satisfaction. Summarily, the factors that influence job satisfaction can be viewed along four perspectives: demographic perspective, psychological factors, organizational factors and job-specific factors. Demographic factors that are known to influence job satisfaction include factors such as age, educational background and gender [11, 12, 32, 40, 54]. The perceived socio-economic climate also influences an individual's perceived job satisfaction. When IT workers perceive that times are bad, they may be less demanding but the reverse may be true in a

bullish economy when demand outweighs supply [58]. Focusing on the individual's psychological aspect, Judge, Locke and Durham [34] found that an individual's core self-evaluation was a significant predictor of job satisfaction. Essentially, the individual's perception of self, and their ability to control emotions and take personal responsibility are all related to how one will perceive a situation and consequently react to it [33,41].

From the organization perspective, job satisfaction is influenced by factors such as culture, job security, management style, pay, and opportunities [6, 8, 10, 14, 48]. Job-specific factors that are known to influence job satisfaction include factors such as autonomy, challenge, creativity, role clarity and esprit de corps [8]. Prior studies have indicated a significant relationship between job satisfaction and autonomy [57] as well as job satisfaction and skill variety for IT professionals [13, 47]. Information technology professionals have also been shown to prefer jobs that provide them with adequate challenges, responsibilities, and a chance to use their creative skills [8, 13, 55]. Like other professionals, IT professionals also want to be recognized for their individual contribution and their professional expertise [55, 61]. Finally, Goldstein and Rockart found that role ambiguity and role conflict were major influences on IT professionals' perceived job satisfaction [25, 26].

Importance of Job Satisfaction

Job satisfaction is important because of its relationships with performance, organizational commitment, organizational citizenship behavior, life satisfaction, mental health and physical health [36, 46, 63]. Kreitner and Kinicki (2001) found evidence that job satisfaction is linked to employee behavior within organizations and that satisfied employees are less likely to be absent, tardy or leave the company [36].

Brief Overview of IT Outsourcing

Information technology outsourcing is generally defined as the contracting or delegation of internal IT functions to external vendors [3]. There are various reasons why organization leaders choose to outsource their information technology functions. Commonly cited reasons for outsourcing include but are not limited to, cost savings, access to new technologies, scalability, improved performance and risk diversification [28, 38, 39].

The idea behind cost savings or cost reduction arises from the belief that vendors have lower overheads, greater economies of scale and focused expertise compared to their clients [4, 50]. Some organizations expect to gain access to new technologies or capabilities by leveraging the provider's expertise. Through these new

capabilities, organizations can sometimes deliver new products, services or even change the way they operate through new business processes [19]. This is very attractive since businesses are constantly on the lookout to deliver new products, better services and improved results.

Outsourcing is also attractive to organizations as it enables them to scale up or cut back on resources as necessary [18]. Client corporations can tap an outsource service provider's talent pool, pulling in additional resources as needed and returning them when the need is over. The vendor's expertise and economies of scale are expected to enable them to deliver consistent service qualities more reliably than customer organizations. Organizations engaged in outsourcing also expect outsourcing to enable improved service levels [59]. At the same time, outsourcing is also used as a strategy to manage or divest risk. Various risk elements may be mitigated through outsourcing because of the vendor's ability, experience and externality [2].

The Threat from IT Outsourcing

By definition, IT outsourcing is the re-assignment of work usually done by internal staff to external professionals. By logical extension, this process poses a job security risk to the staff whose job no longer exists. When Royal Dutch Shell announced plans to outsource significant portions of its information technology division, that plan also included the elimination of approximately 3000 internal jobs at the company [45]. Similarly, AstraZeneca's outsourcing initiative will also include the elimination of most of its IT jobs within the organization [15]. Given this background, it is not surprising to find evidence of growing concerns and resistance from IT professionals concerning outsourcing [21].

The Influence of Outsourcing on Job Satisfaction

Since job satisfaction is influenced by a various factors, there are several ways IT outsourcing can influence the job satisfaction of IT professionals. As described above, high profile outsourcing initiatives in the media have already created an association that IT outsourcing can often lead to the loss of jobs. Since job security is related to job satisfaction [1, 35], the increase in outsourcing activities is expected to threaten the job security and consequently, the job satisfaction of IT professionals. At the same time, IT staff may perceive an inequity in the way they are being treated in comparison to the vendor, giving rise to feelings of dissatisfaction [7]. To confirm these assertions, it is proposed that:

Hypothesis 1: IT professionals will view IT outsourcing as a threat to their job security

Hypothesis 2: In organizations that do outsource, the job satisfaction levels of IT professionals who perceive IT outsourcing as a threat will be lower compared to those who do not perceive IT outsourcing as a threat

On the other hand, if IT professionals feel they have influence over the outsourcing arrangement, this may help allay job security concerns and also provide opportunities for a mutually beneficial relationship between the in-house team and external resources. It is thus proposed that:

Hypothesis 3: Job satisfaction is related to perceived involvement in the IT outsourcing arrangement

At the same time, IT outsourcing has the potential to increase the job satisfaction of the organization's IT professionals since it can complement and strengthen their capability, provide access to advanced technical resources and rapidly scale up to meet fresh demands [28, 38, 39]. If an IT vendor is able to realize these advantages, the job satisfaction of the in-house IT staff may be positively enhanced, given that in-house staff usually remain the first point of contact for the system users. It is thus proposed:

Hypothesis 4: Job satisfaction is related to perceived outsourcing outcome

3. Methodology

Participants

The target participants of this survey are information technology professionals working in American companies. In collaboration with Markettools, participants were selected from a random sample of the MarketTool's TrueSample® database. TrueSample® is a quality-assured database that provides researchers with survey participants that are real, unique and engaged (MarketTools Inc., 2008). The TrueSample® database reflects national demographics, with participants from all industries across the United States of America. A total of 310 complete responses were received with a total of 298 valid responses.

Procedures

This section details how the study was conducted.

Prepared survey questionnaire. The survey questionnaire was prepared with the intent to capture the job satisfaction level and opinions concerning IT outsourcing from IT professionals. To assess job satisfaction, the researcher selected Paul Spector's Job Satisfaction Survey [57]. To obtain opinions concerning IT outsourcing from IT professionals, the researcher conducted an in-depth literature review, extracted the key variables of interest and developed specific

questions designed to inquire the variables of interest.

Invite potential participants to the study. The research was conducted in collaboration with MarketTools, Inc. Having determined a clear target respondent profile, i.e. IT professionals working in America, the survey, consisting of 69 questions was sent to MarketTools Truesample® database.

Received and analyzed survey data. Having received a satisfactory response rate, the survey was closed and the data was downloaded from the MarketTools provided website. Analysis of the received data was conducted and the resulting report was written.

Operational Definition of Variables

In this study, job satisfaction was measured using Spector’s Job Satisfaction Survey (JSS). JSS is a 36 item, nine facet Likert scale designed to calculate an employee’s job satisfaction level based on their perceived attitude towards key aspects of their job. Survey questions in the JSS are written in both directions, and about half must be reverse scored. The nine facets are Pay, Promotion, Supervision, Fringe Benefits, Contingent Rewards (performance based rewards), Operating Procedures (required rules and procedures), Coworkers, Nature of Work, and Communication [57]. According to Spector, the JSS has a coefficient alpha of 0.91 [57].

Perceived threat from IT outsourcing. This variable is defined as the perceived threat of IT outsourcing to job security from the viewpoint of the IT professional. Responses are captured from responses to a 6-choice Likert scale ranging from ‘Disagree very much’ to ‘Agree very much’.

Perceived outsourcing outcome. This construct is defined as the perceived outcome or results of outsourcing activities from the viewpoint of the IT professional. The construct is a composite of four Likert-scale questions and the results of exploratory factor analyses using maximum likelihood analyses and internal reliability analysis are presented in Table 1.

Given the construct’s Cronbach’s alpha score of 0.91 is higher than Nunnally’s proposed minimum of 0.7 [57], and further supported by the factor loadings as shown in Table 1, the construct is deemed valid.

Table 1. Perceived outsourcing outcome

Question	Question Text	Factor Loadings	Cronbach’s alpha
48	Outsourced projects or work are usually delivered with satisfactory quality	0.8841	0.91
49	Outsourced projects or work are usually delivered on time	0.8602	
50	IT outsourcing is cost effective and can help companies get more while spending less	0.8759	
53	Information systems that are outsourced perform better than those maintained by in-house teams	0.7830	

Perceived involvement in IT outsourcing arrangement. This construct consists of several independent variables and is operationally defined as the perceived participation and influence over the outsourcing decision from the viewpoint of the IT professional. The construct is a composite of four likert-scale questions and the results of exploratory factor analyses using maximum likelihood analyses and internal reliability analysis are presented in Table 2.

Table 2. Perceived influence over IT outsourcing arrangement construct

Question Number	Question Text	Factor loadings	Cronbach's alpha
64	Prior to engaging any IT outsourcing vendor, my superior usually seeks my input	0.8128	0.91
65	I am involved in the price negotiation process with my company's IT outsourcing vendors	0.8422	
66	I am involved in the regular review of my company's IT outsourcing vendors' performance	0.8536	
67	My superior usually seeks my input when it comes to the renewal or dismissal of IT outsourcing vendors	0.8879	

Given the construct's Cronbach's alpha score of 0.91 is higher than Nunnally's proposed minimum of 0.7 [57], and further supported by the factor loadings as shown in Table 1, the construct is deemed valid.

Owing to the specific nature of the study and the maturity of the principle survey instrument, a pilot test was not deemed necessary for this study.

4. Results

From the responses received, 58.39% (174) of the respondents were male while the remaining 41.61% (124) were female. The largest age group was the age group between 26 years of age to 35 years of age. 45.64% of the total number of participants fell into this age group. These are shown in Table 3.

Table 3. Characteristics of sample (n=298)

Variable	Items	Frequency	Percentage	
Gender	Male	174	58.39%	
	Female	124	41.61%	
Age	Below 26	15	5.03%	
	26 to 35	136	45.64%	
	36 to 45	68	22.82%	
	Above 45	79	26.51%	
Job role	Management	45	15.10%	
	System admin/support	84	28.19%	
	Networking	18	6.04%	
	Software development	85	28.52%	
	Business analysis	23	7.72%	
	Project management	26	8.72%	
	Information security	17	5.70%	
	Company sizes	Below 100 persons	58	19.46%
		100 to 499 persons	63	21.14%
		500 to 1500 persons	57	19.13%
Above 1500 persons		120	40.27%	
Years of working experience		Below 2 years	13	4.36%
	2 - 5 years	55	18.46%	
	6 - 10 years	82	27.52%	
	Greater than 10 years	148	49.66%	

Within the sub-specializations of the IT profession, the two largest groups remained software development (28.52%) and system administration/support (28.19%). The combined total of these two groups exceed more than half of the total number of participants. About 15.10% of the respondents listed their job role as being in management and 8.72% of the respondents listed their job role as being in project management.

The respondents came from diverse company sizes, enriching the population sample. The largest group of respondents worked in companies with more than 1500 persons. This group constituted 40.27% of the total number of respondents. In terms of working experience, 49.66% of the respondents had more than 10 years working experience while 27.52% had between six to 10 years working experience.

State of IT Outsourcing

Table 4. State of IT outsourcing (n=298)

Survey question	Responses	Frequency	Percentage
Does your company engage in IT Outsourcing presently?	Yes	130	43.62%
	No	154	51.68%
	Not any more	14	4.70%
Do you think your company will outsource less, the same or more IT functions within the next 3 years?	Less	36	12.08%
	The Same (as today)	196	65.77%
	More	66	22.15%
	Less OR more IT functions within the next 3 years?		
Do you prefer your company to outsource the same, less OR more IT functions within the next 3 years?	Less	104	34.90%
	The Same (as today)	161	54.03%
	More	33	11.07%
I am satisfied with the performance of my company's IT outsourcing vendors	Disagree very much	22	16.92%
	Disagree moderately	7	5.38%
	Disagree slightly	26	20%
	Disagree	33	25.4%
	Disagree slightly	35	26.92%
	Agree slightly	7	5.38%
	Agree moderately		
Note: n=130	Agree very much		

According to the survey, 51.68% of the respondents indicated that their company did not presently utilize IT outsourcing, while 43.62% indicated that their organizations used IT outsourcing presently. While 22.15% of responses received believe their organizations would outsource more in the future, only 11.07% preferred such a direction. From those who responded that their present organizations

outsourced IT, 57.7% indicated satisfaction with the performance of their IT vendors.

State of Job Satisfaction

From the survey, the number of dissatisfied IT professionals was relatively small. Only 8.72% of the IT professionals surveyed had job satisfaction scores below 108, a score deemed to indicate dissatisfaction according to Spector (Spector, 1999). The results are summarized in Table 5

Table 5. Job satisfaction scores by category

Level of Satisfaction	Frequency	Percent
Dissatisfied (scores 36 to 108)	26	8.72%
Ambivalent (scores 109 to 143)	162	54.36%
Satisfied (scores 144 to 216)	110	36.91%

The survey sample of 298 IT professionals indicated a mean job satisfaction score of 138.75 and a median score of 135.

IT professionals do view IT outsourcing as a threat to their job security

According to the survey, the proportion of IT professionals perceiving IT outsourcing as a threat was recorded as 58.39%. Using a z-test to test the significance of this population proportion, the p-value derived was 0.9981, hence the proportion is deemed statistically significant at alpha 0.05. Conclusion: IT professionals do view IT outsourcing as a threat to their job security.

Job satisfaction is lower for those who perceive IT outsourcing as a threat

For those organizations that engage outsourcing, the results of the t-test to compare the job satisfaction means indicated that the job satisfaction means of IT professionals were significantly lower for those who perceived IT outsourcing as a threat compared to those who did not have this perception. The p-value derived was 0.0029, indicating significance at alpha 0.05 level. The mean job satisfaction score for those who perceived that IT outsourcing is a threat was 130.74 compared to 144.45 for those who did not perceive IT outsourcing as a threat.

Job satisfaction is related to perceived involvement in the IT outsourcing arrangement

Univariate regression analysis was run to identify whether a significant relationship existed between job satisfaction and perceived involvement in the IT outsourcing arrangement. The resulting ANOVA table generated from the results of the regression analysis is shown in Table 6. The regression analysis indicates that job

satisfaction is related to perceived involvement in the IT outsourcing arrangement.

Table 6. ANOVA table for hypothesis 3

	df	SS	MS	F	Significance
Regression	1	4588.864	4588.864	6.239239	0.013763026
Residual	128	94142.03	735.4846		
Total	129	98730.89			

Job satisfaction is influenced by perceived outsourcing outcome

Univariate regression analysis was run to identify whether a significant relationship existed between job satisfaction and perceived satisfaction with the outsourcing outcome. The resulting ANOVA table generated from the results of the regression analysis is shown in Table 7. The regression analysis indicates that job satisfaction is related to perceived satisfaction with the outsourcing outcome, and is likely to be influenced by the perceived outsourcing outcome.

Table 7. ANOVA table for hypothesis 4

	df	SS	MS	F	Significance
Regression	1	8247.977	8247.977	11.66785	0.00085
Residual	128	90482.92	706.898		
Total	129	98730.89			

5. Discussion

The research objective was to study how perceptions of IT outsourcing influence the job satisfaction of IT professionals. By the very definition that IT outsourcing is a delegation of internal jobs to external parties, it is not surprising that IT professionals perceive IT outsourcing as a threat to their job security. This perception is likely reinforced by repeated examples in media where high profile outsourcing arrangements have often been accompanied by the downsizing of internal IT departments. The finding that IT professionals feel their job security is threatened by outsourcing is consistent with related observations by to Kusel, Kocher, London, Buttolph, and Schuster (2005), Carr (2006), Huang, Greene and Day (2008) [9, 29, 37].

Extending from this finding, it is also consistent that for those IT professionals who believe that IT outsourcing is a significant threat to their job security, their job satisfaction is likely to be impacted when their organization embarks on IT outsourcing. This finding is consistent with Judge et al's assertion [33] that job satisfaction is influenced by an individual's psychological evaluation of a given situation. A similar finding by Humphrey, Nahrgang and Morgeson [30] reported lowered job satisfaction for workers after their job roles were changed due to outsourcing. Hence, while outsourcing conveys

certain advantages, it often leads to reduced commitment between employees and their employers as a result of reduced trust arising from reduced job security and perceived reduced opportunities for employees [37].

Job satisfaction was also found to be related to the perceived involvement in the IT outsourcing arrangement. This is an interesting finding and it is proposed that when IT professionals perceive greater control over the IT outsourcing arrangement, there is the possibility that the overall perception may shift from that of being an adversarial relationship to one of cooperation and mutual benefit. A related study by Tuck [60] has also highlighted the need to keep employees engaged throughout the change management process that is often part and parcel of any outsourcing program.

Finally, job satisfaction was found to be related to perceived outsourcing outcome. This has the implication that the outsourcing outcome influences the job satisfaction of IT professionals. This is consistent given that the results of any outsourcing initiative affect internal IT staff as well.

Even when a function is outsourced, the remaining internal IT staff typically continue to function as first line contacts for the organization and are often the first recipient of service requests or complaints. It is therefore reasonable to expect that when an outsourcing initiative goes well, the general job satisfaction of the organizations' internal IT professionals is enhanced.

Managerial Implications

The results of this study are significant and relevant for managers, business leaders and all those involved in an organization's outsourcing initiative. First, managers should appreciate that IT professionals typically perceive IT outsourcing as a threat to their job security. The results from this study also indicate that workers who perceive IT outsourcing as a significant threat have lower perceived job satisfaction compared to those who do not have the same perception. These two findings are important because managers then have to mitigate the risks arising from two related scenarios.

Possible staff behavior arising from perceived job insecurity. While some staff that are insecure in their job security may respond positively by working harder [16], others may react negatively, feel demoralized and reduce their commitment to the organization [37]. Staff may also start to explore opportunities for employment elsewhere even if their jobs are not presently at risk [31]. In their study, Reisel, Chia and Maloles [52] found

that job insecurity was negatively related to employee adaptiveness and team esprit de corps. While it is difficult to predict how a particular staff might react, the possible negative behaviors arising from job insecurity should pose sufficient risk to the organization such that plans should be developed to mitigate these risks.

Possible staff behavior arising from reduced job satisfaction. From previous studies, reduced job satisfaction has been linked to reduced life satisfaction and a range of accompanying negative implications [10]. As job satisfaction is related to organizational commitment, reduced job satisfaction may lead to reduced organizational commitment leading to absenteeism, tardiness, turnover intent and other organizational citizenship behaviors [5, 20].

Strategies to reduce the perception of threat include involving internal staff as early as possible in the decision-making process concerning outsourcing. A comprehensive communication strategy is also useful to market the outsourcing initiative as an asset and a potentially mutually beneficial experience for all parties involved. Managers are also encouraged to explore job redesign opportunities to create interesting and viable career possibilities for their internal IT staff. The study also provided evidence that job satisfaction is positively related to the outsourcing outcome. This has the implication that a well-managed outsourcing initiative can also positively impact the internal team's job satisfaction. As such, there should be motivation for managers to establish an environment that is conducive to support outsourcing success, while ensuring the job security needs of internal staff are addressed. If this is achieved, outsourcing can truly deliver the expected benefits.

Limitations and Future Research

As is often the case with any research, there are limitations to this study. First, the results of the study are based on the feedback derived from the sample, hence there are limits to generalization of findings. Second, the study was a cross-sectional study, hence the results represent the perception of IT professionals at a single point in time. Finally, the sample of the study is limited to a single geography, it might be interesting for future studies to expand beyond current boundaries.

Future research might look at a longitudinal approach to see if attitudes and perception change over time and to identify the salient factors causing the change. It might also be interesting to apply a similar approach to different geographies and cultures to assess the

applicability of findings across cultures. Last but not least, a mixed methodology study could provide more in-depth information about the phenomenon under study and yield fresh insight.

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