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Hans Solli-Sæther

BI Norwegian School of Management

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HANS SOLLI-SÆTHER
Norwegian School of Management
Nydalsveien 17, 0442 Oslo, Norway
Mobile: +47 90944815, Fax: +47 46410701
e-mail: hans.solli-sather@bi.no

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ABSTRACT

Purpose – This micro-level outsourcing research provides insight into how individuals are affected by the outsourcing arrangement. The aim of this exploratory case study was to develop an understanding of individual level role stress and work outcomes among transferred employees in IT outsourcing relationships.

Design/methodology/approach – A research model was developed based on role theory. Through a field survey conducted in one outsourcing vendor, the research confirms the hypothesis that proposes role stress as prevalent among transferred IT employees.

Findings – Perceived role stress was found to influence behavioural work outcomes measured as task performance, turnover intention, and affective commitment. The effect of role stress on work outcomes indicates that carefully crafted outsourcing strategies must take into account the unique position of transferred IT employees since the outsourcing arrangement may affect their work outcome.

Originality/value – The original value of the paper is the use of role theory to extend the scientific research and theory of outsourcing and inform managers of outsourcing decisions. The study is applied at the individual level, which is new in the sense that most outsourcing studies are applied at the organisational level.

Keywords: Outsourcing relationship, transplants, role stress, task performance, turnover intention, affective commitment

Paper type: Research paper

1. INTRODUCTION

According to Kern and Willcocks (2002, p. 3), “*IT outsourcing* describes a process whereby an organisation decides to contract-out or sell the firm’s IT assets, people and/or activities to a third party supplier, who, in exchange, provides and manages these assets and services for an agreed fee over an agreed time period.” From a business perspective, outsourcing is motivated by the promise of strategic, financial and technological benefits (Lee and Kim, 1999). But, outsourcing is also about organisational, relational, and individual changes. As the contract is signed, there is an overnight change in legal relationships, personal relationships, and control mechanisms. In recent years, private and public sector organisations worldwide have outsourced significant portions of their IT functions. Examples can be found in major organisations such as Scandinavian Airlines Systems, ABB, and Rolls-Royce.

Researchers have investigated both critical success factors and risks of outsourcing, identifying critical issues such as entry strategy, contract development, governance structures and cost controls. High-ranking issues are also identified such as stakeholder management (Gottschalk and Solli-Sæther, 2005), people management (Chan and Chin, 2007), and staff issues (Gonzalez et al., 2010a). The transfer of IT workers from client to vendor organisation is an important issue for many outsourcing arrangements.

Defining the scope of an outsourcing project managers need information about outsourcing type, functions, units, sites, services, and the decision whether employees will be transferred or not (Weimer and Seuring, 2008). According to Shao and David (2007), it is common to transfer internal IT staff to the service provider when onshore outsourcing occurs. This is also recognised by Ranganathan and Outlay (2009), using the term outplacement when selected IT personnel are transferred to an external party such as an outsourcing vendor. According to Ho et al. (2003, p. 66), *transplants* are defined as those “IT employees (that) formally leave their

organization and are transplanted to the new [...] company, which employs them and offers their services back to the original employer for a service fee.”

Investigations into outsourcing ventures at the macro-level differentiate between the country, the industry, the relationship, and the organisation/firm. The micro-level is concerned with groups or individuals within the firm and their behaviour, motivations, perceptions, and preferences. Previous literature reviews of IT outsourcing research uncovered only a few articles that reported on micro-level outsourcing (see e.g., Dibbern et al., 2004, Gonzales et al., 2006). Reviewing major information systems (IS) and information technology (IT) journals, examining papers that contain either “outsourcing” and/or “IT workers” in their title or key word, the researcher uncovered a few more articles published between 2006 and 2010. Research articles found in the review covered topics such as motivation, different aspects of work outcome (Ang and Slaughter, 2001), persistence of expectation (Ho et al., 2003), psychological contracts (Koh et al., 2004), interpersonal conflicts (Ulbrich, 2009), and self-interest (Gonzalez et al., 2010b), but very little attention was found on the issue of how outsourcing affects those employees transferred to a vendor. Table 1 shows some of the studies on micro-level outsourcing research.

From the discipline of psychology, researchers have found that the cost of unmanaged stress is, at a minimum, an increased risk of morbidity and mortality (Siegrist, 1998), and occupational stress represents a real threat to well-being in the workplace (Danna and Griffin, 1999). Moreover, “stress in the workplace is primarily caused by the fundamentals of change, lack of control, and high workload” (Cartwright, 2000, p. 18). Because transferred IT employees experience radical changes in the workplace during outsourcing, occupational stress may occur, which in turn may influence their work outcomes.

The primary objective of this study is to examine the influences of the transplants’ individual level role stress on their work outcome and to identify what influences the transplants’ level

of role stress. Specifically, two research questions arise: “How does the transplants’ role stress in IT outsourcing affect their work outcome?” and “What are the predictors of the transplants’ role stress in IT outsourcing?” The paper is structured in six sections including this introduction. In the next section the research framework is presented. The third section describes the research method used and the fourth section presents the data analysis and results. Section five discusses the results and their implications for research and practice, while the final section summarises the study’s contributions.

Study	Research method	Contributions
Brooks (2006)	Review	Challenges faced by the IT workforce, when engaging in various types of outsourcing, include factors such as changed levels of commitment, satisfaction, and turnover intention.
Shao and David (2007)	Conceptual	When onshore outsourcing occurs, it is common for the outsourcing customer to transfer internal IT staff to the service provider. Offshore outsourcing poses greater risk for the IT workforce because it typically translates into exportation of domestic jobs to foreign countries.
Brooks et al. (2009)	Survey among 450 IT workers from various organisations in the US	IT professionals are aware of outsourcing’s impact on themselves and on their profession. Both personally and professionally, outsourcing was perceived to have a negative impact.
Ranganathan and Outlay (2009)	Fieldwork with 12 companies	Any major IT outsourcing programme creates people issues. IT resizing, in terms of layoffs, transferring employees to a vendor, internal transfer, impacts IT workers.
Ulbrich (2009)	Case study	Interpersonal conflicts had a determining influence on an organization’s IS-sourcing decision.
Gonzalez et al. (2010b)	Survey among 349 IS managers in Spain	Outsourcing has benefited IS managers in the largest Spanish firms, enhancing their jobs and working as a valuable alternative to internal IS activity.

Table 1: Some micro-level IT outsourcing studies

2. RESEARCH FRAMEWORK

The central idea in stakeholder theory is that an organisation’s success is dependent on how well it manages the relationships with key groups, such as customers, employees, suppliers, and others that can affect the realisation of its purpose (Freeman and Phillips, 2002). Lacity and Willcocks (2000) identified several IT outsourcing stakeholder groups such as client’s senior management, business management, retained IT management, and IT users, and vendor’s senior management, account management, and IT employees. In this research,

transplants are recognised as an additional and important stakeholder group. Using role theory, this research argues that radical organisational change may lead to occupational stress among transplants. According to Fevre et al. (2003, p. 728), “stressor will denote the external force or situation acting on the individual, and stress will denote the deformation or changes produced in the individual as a result of those forces.” In this research, outsourcing environmental characteristics are stressors specified as independent variables, and transplant’s role stress and work outcomes are specified as dependent variables. The research model examined is shown in Figure 1.

<Insert Figure 1 about here>

Role stress is generally conceptualised using two interrelated constructs: role conflict and role ambiguity (Nygaard and Dahlstrom, 2002, Joseph et al., 2007). *Role conflict* occurs when a transplant believes that the expectations and demands of two or more members of his or her role set are incompatible (e.g., role expectations from a vendor manager and a client manager). *Role ambiguity* relates to the perceived lack of information a transplant needs to perform his or her role adequately and his or her uncertainty about expectations of different role set members. The linear influence of role stress on performance has been examined by previous research (Tarafdar et al., 2007), finding support for a dysfunctional view that role stress has significant negative effects on job performance. The move of IT employees from client to a vendor organisation during outsourcing may influence individual level attitudes, behaviour and performance. Brooks (2006) suggests that the challenges faced by the IT workforce, when engaging in various types of outsourcing, include factors such as changed levels of commitment, satisfaction, and turnover intention. According to Brooks et al. (2009), IT professionals perceived outsourcing to have a negative impact on themselves and on their profession. This research suggests that the transplants’ perceived role stress has a negative,

linear, and dysfunctional relationship with their work outcomes measured as task performance, turnover intention, and affective commitment. Therefore,

Hypothesis 1: Transplants' role conflicts are negatively related to task performance and affective commitment, and positively related to turnover intention

Hypothesis 2: Transplants' role ambiguities are negatively related to task performance and affective commitment, and positively related to turnover intention

According to Quinn and Hilmer (1994), companies can substantially leverage their resources by developing a few, well-selected, core competencies of significance to customers, focusing investment and management attention on them, while strategically outsourcing other activities. As such, a core competence strategy may lead to outsourcing of IT. Levina and Ross (2003) suggest that the vendor's efficiency is based on the economic benefits derived from the ability to develop a complementary set of core competencies. Their study indicates that a vendor can deliver value to its clients by developing a set of experienced based core competencies that address client needs and market conditions, and exhibits complementarities that result in efficient service delivery. This ability is shared with clients through formal and informal relationship management structures. This new organisation of work and delivery of value is proposed to have a positive effect on organisational work performance.

As a consequence of outsourcing, transplants get transferred to the vendor company, which define IT competencies as their core competencies. Demarcation of labour inline with client and vendor companies' core competencies will reduce transplants' role stress. Expectations among different stakeholders are harmonised according to the new organisation of work, and thus reduce a transplant's role conflict. Organisations of competencies are clear and understood among the stakeholders, and thus reduce a transplant's role ambiguity.

Hypothesis 3: Complementary core competencies are negatively related to transplants' role conflict and role ambiguity

According to Ho et al. (2003), client managers found it both difficult and awkward to manage former subordinates as external contractors. In their research, Ho et al. (2003) found a positive relationship between the client managers' persistence of expectations and their perceived performance of IT outsourcers. Client managers' perceptions are influenced by prior expectations, i.e. people construct their perceptions to be aligned with their prior expectations. From their prior experience in supervising the transplants as subordinates, client managers have developed clear expectations about what the transplants should provide to the organisation, such as requisite levels of work, effort, and commitment (Ho et al., 2003).

If prior expectations persist into the IT outsourcing relationship, client managers would tend to think of the transplants as if they were still subordinates, imposing on them role expectations that are not appropriate under the new contractual relationship. It is also likely that vendor managers are also impose role expectations on them. And thus, the persistent client managerial demands and expectations may take the form of perceived stressors, when a transplant believes there is role conflict and ambiguity.

Hypothesis 4: Persistent client managerial expectations are positively related to transplants' role conflict and role ambiguity

The potential beneficial effect of relational norms has been recognised for some time. Research conducted by Heide and John (1992); Artz and Brush (2000), among others, suggests that as relational norms become more prevalent, the following three behaviours are observed: co-operation will replace competition as the norm, opportunistic behaviour will decline, and relationship adaptability will increase. Since transplants were previously a part of the client organisation and are now a part of the vendor organisation, two different corporate cultures and different types of work behaviour affect them. Both parties might serve as role

senders, imposing on transplants different demands and expectations on transplants. Creating and maintaining relational norms for the outsourcing relationship might reduce the probability of inconsistent expectations. Although relational norms are designed to enhance the well-being of the relationship as a whole, such norms may serve as a role sender itself, reducing the transplants' perceived role conflict and ambiguity. Therefore,

Hypothesis 5: Relational norms are negatively related to transplants' role conflict and role ambiguity

3. RESEARCH METHODOLOGY

The research model and hypotheses presented emphasise the interface of environmental stimuli and individual perception of those stimuli. Thus, the unit of analysis was the independent individual; the transplant that gets transferred from the client company to the vendor company. Since the unit of analysis was at the individual transplant level, the researcher needed access to an outsourcer.

Sample and data collection

Two important criteria for selection of respondents were: 1) the IT employees should formally have left their organization and be transplanted into the new company, and 2) the IT employees should continue to deliver services back to their original employer. These criteria were necessary to fulfil obligations given by the previous definition of transplants. A few months prior to the survey, a large bank in Norway had announced an outsourcing deal of application support and development, where more than a hundred people were transferred from client to vendor to fulfil the requirements of the deal. The researcher contacted the global outsourcer located in Norway, asking for permission to conduct an exploratory survey

of transplants of IT outsourcing. Permission was given, and the survey was prepared for transplants in the vendor company.

The web-based tool QuestBack was used for the design, data collection and reporting of survey data. A list of email addresses for potential respondents was received from the human resource department of the vendor company. This list included all employees transferred from a particular client company to the vendor – a total of 114 transplants. Email addresses were copied into QuestBack, which took care of the distribution. Each potential respondent received an email with a short explanation of the purpose of the research, a statement of support from top management and the Works Council of the company, a statement of confidentiality and anonymity, and the researcher’s contact information. At the end of the email there was a link to the web-based questionnaire.

A total of 69 complete questionnaires were received, which makes the overall response rate 60.5%. Four responses were later refused because the respondents did not belong to the target group of transplants. The survey collected information regarding the respondent’s gender, educational background and study field, years employed by the client company and current position in the vendor company. Demographics for the sample are provided in Table 2.

Measure	Items	Frequencies	Percent
Gender	Male	57	87.7 %
	Female	8	12.3 %
Age	20 – 29	4	6.2 %
	30 – 39	18	27.7 %
	40 – 49	22	33.8 %
	50 – 59	17	26.2 %
	60 or elder	4	6.2 %
Educational background	High school	21	32.3 %
	Bachelor’s (3 years)	26	40.0 %
	Master’s (5 years)	5	7.7 %
	PhD	-	-
	Other	13	20.0 %
Study field	Technology/information sciences	39	60.0 %
	Economics/management	11	16.9 %
	Social sciences	2	3.1 %
	Other	13	20.0 %
Years employed by client company	0 – 3	7	10.8 %
	4 – 6	20	30.8 %

	7 – 9	4	6.1 %
	10 or more	34	52.3 %
Current position at vendor company	Senior management	1	1.5 %
	Account/service management	17	26.2 %
	Service provider	36	55.4 %
	Staff function	11	16.9 %

Table 2: *Sample characteristics of respondents*

Taken as a whole, 87.7% of the respondents were male and 12.3% were female. Regarding their highest educational background, 32.3% had completed high school, 40.0% had a Bachelor's degree or equivalent, 7.7% had a Master's degree, and 20.0% had other educational background. Not surprisingly, 60.0% of the respondents had their main field of study within technology and information sciences. A group of 16.9% had studied economics and management. Other fields of study included such things as natural sciences, social sciences, and the humanities. Respondents' current positions in the vendor company were within service management (26.2%), service provider (55.4%), and staff function (16.9%). Interesting to note was the length of the respondent's previous employment at the client company. More than half (52.3%) of the respondents had worked for 10 or more years at their previous employer. Only 10.4% of the respondents had been employed by the client company for less than 4 years prior to the outsourcing. This indicates that the respondents were knowledgeable and involved transplants well qualified to comment on the individually perceived role stress and work outcome that were caused by the outsourcing arrangement. As the global outsourcer had been involved in several outsourcing arrangements, receiving IT employees from different client companies, the respondent group seemed to be a representative example of transplants.

Construct measurement

Work outcome was measured as task performance, affective commitment and turnover intention. Task performance refers to the degree to which a transplant can fulfil

responsibilities and meet quality standards, and was operationalised into six components by Kuvaas (2006). Affective commitment refers to the emotional attachment to an organisation, and was measured by the six item scale used by Kuvaas (2006). Turnover intention refers to the behavioural intent to leave the organisation. It was measured by five items used by Kuvaas (2006).

The *role stress* scales were based on the measures used by Nygaard and Dahlstrom (2002). Role ambiguity refers to the lack of clarity of a transplant's behavioural requirements. Role conflict refers to the degree of incongruity or incompatibility of expectations associated with a transplant's role. The conflict and ambiguity measures consisted of six and seven items, respectively.

Three *outsourcing characteristics* were proposed as environmental stressors influencing a transplant's perception of role stress. Complementary core competencies refer to the degree to which the transplant's competence can enhance a client organisation's ability to achieve business goals. It was operationalised with three items from Lambe et al. (2002) and one item from Van der Heijden (2001). Persistent client managerial expectations refer to the degree to which client managers continued to expect the transplants to respond as if they were still subordinates. Seven items measured the construct (Ho et al., 2003). Relational norms are defined as a higher order construct consisting of the dimensions flexibility, information exchange, and solidarity. Items were adapted from Heide and John (1992).

Instrument validation

A questionnaire was developed and used to collect survey data. To ensure content validity, the items were first reviewed in a pre-test among academic experts, practitioner experts, and a few transplants affected by outsourcing. Experience from the pre-test was that the label attached to the measures seems to be appropriate. The items seem to measure what they claim to. In this research existing measures from the literature were adapted to ensure strong

construct validity. All constructs used seem to have theoretical agreement on their content. Only a few corrections to the constructs were applied, leaving most items unchanged. High correlation between alternative measures (large Cronbach alphas) is usually a sign that the measures are reliable. All items used and Cronbach alphas are presented in Appendix A. Details concerning the survey results and analysis are given in the next section.

4. DATA ANALYSIS AND RESULTS

A structural modelling technique, Partial Least Square (PLS), was used to analyse the data and test the hypotheses. Following the recommendation of Chin (1998), bootstrap re-sampling was used, with a number of re-sampled cases set to 500. While PLS is typically used to model causal relationships among latent variables (factors), it is equally possible to use PLS to explore confirmatory factor analysis measurement models. The measurement model in this research was analysed in three stages: (1) the individual item reliabilities, (2) the model's convergent validity, and (3) discriminant validity.

Individual item reliability was examined by looking at the loadings, or correlations, of each indicator on its respective construct. For reflective indicators, a generally recognised rule of thumb is that items with a loading of 0.707 or above demonstrate acceptable reliability (Barclay et al., 1995). All factor loadings in the model have t-values that exceeded 2.0.

The next step in analysing the measurement model was to evaluate convergent validity. The indicators for a given construct should be at least moderately correlated among themselves. Poor convergent validity among the indicators for a factor may mean the model needs to have more factors. Convergent validity was evaluated by examining the composite reliability and average variance extracted (AVE) from the measures. Table 3 shows that the composite

reliability scores, as well as the AVE scores, for each of the constructs. The scores demonstrate an acceptable level of internal consistency of the construct indicators.

Measures	Items*	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Complementary competencies	3 (4)	.678	.813	.594
Persistent expectations	6 (6)	.887	.911	.631
Relational norms	9 (10)	.882	.906	.527
Role conflict	5 (6)	.778	.850	.535
Role ambiguity	5 (7)	.772	.844	.527
Task performance	6 (6)	.839	.883	.568
Affective commitment	5 (6)	.769	.827	.503
Turnover intention	5 (5)	.859	.933	.739

* Final item numbers (initial item numbers)

Table 3: Results from confirmatory factor analysis

Variable	Mean	S.D.	1	2	3	4	5	6	7	8
1) Complementary comp.	5.713	0.812	.770							
2) Persistent expectations	4.208	1.453	.180	.794						
3) Relational norms	4.224	1.133	-.114	-.071	.725					
4) Role conflict	3.942	1.205	.271	.466	-.365	.731				
5) Role ambiguity	3.508	1.035	-.144	.017	-.473	.317	.725			
6) Task performance	5.262	0.852	.241	.465	.085	.246	-.436	.753		
7) Affective commitment	4.040	1.194	.081	.108	.278	-.268	-.413	.310	.709	
8) Turnover intention	3.935	1.590	.192	.030	-.372	.481	.427	-.075	-.614	.859

Note: The shared numbers in the diagonal row are squared roots of the average variance extracted, which is the square root of the variance shared between the constructs and their measure. Off diagonals are the correlations between constructs. The diagonal should be larger than any other corresponding row or column entry in order to support discriminant validity.

Table 4: Means, standard deviations, correlation, and AVE of variables

In PLS analysis, one criterion for adequate discriminant validity is that a construct should share more variance with its measure than it shares with other constructs in the model (Barclay et al., 1995). The AVE of a given construct should be greater than the variance between that construct and other constructs. An examination of Table 4 shows that the AVE values on the diagonal are greater than the off-diagonal values in the corresponding rows and columns; each construct shows a larger variance with its own measures than with other measures. With an adequate measurement model and an acceptable level of multi-collinearity, the proposed hypotheses were tested with PLS. The results of the analysis are depicted in Figure 2 and estimates of the relationships are shown in Table 5.

<Insert Figure 2 about here>

Dependent variable	Predictor variable	Hypothesised sign	Path coefficients	t-value	Significance level	R ²
Task performance	Role conflict	-	0.427	4.0720	$p < 0.001$	0.354
	Role ambiguity	-	-0.571	3.5421	$p < 0.001$	
Affective commitment	Role conflict	-	-0.152	0.9090	-	0.191
	Role ambiguity	-	-0.365	2.1623	$p < 0.01$	
Turnover intention	Role conflict	+	0.384	3.4957	$p < 0.001$	0.315
	Role ambiguity	+	0.305	2.1567	$p < 0.01$	
Role conflict	Complementary comp.	-	0.160	1.0893	-	0.352
	Persistent expectations	+	0.414	4.0089	$p < 0.001$	
	Relational norms	-	-0.317	2.3891	$p < 0.01$	
Role ambiguity	Complementary comp.	-	-0.203	0.8606	-	0.264
	Persistent expectations	+	0.018	0.1075	-	
	Relational norms	-	-0.495	4.8265	$p < 0.001$	

If the absolute value of the test statistic is greater than the upper critical value, then we reject the null hypothesis.

Table 5: Role stress and work outcome estimates

Hypotheses 1 and 2 examined the relationship between role stress and work outcome. Contrary to the proposal in hypothesis 1, results indicate a significant, positive relationship between role conflict and task performance ($\beta = 0.427$, $t = 4.0720$, $p < 0.001$). As proposed, results indicate a significant, positive relationship role conflict and turnover intention ($\beta = 0.384$, $t = 3.4957$, $p < 0.001$). Findings provided support for hypothesis 2, relating role ambiguity to task performance. Results indicate a significant, negative relationship between these two variables ($\beta = -0.571$, $t = 3.5421$, $p < 0.001$). Results indicate a significant, negative relationship between role ambiguity and affective commitment ($\beta = -0.365$, $t = 2.1623$, $p < 0.01$), and a positive relationship between role ambiguity and turnover intention ($\beta = 0.305$, $t = 2.1567$, $p < 0.01$).

Hypotheses 3, 4 and 5 examined the relationship between outsourcing arrangement stressors and role stress. In hypothesis 4, the persistent expectations variable was found to have a positive relationship with role conflict ($\beta = 0.414$, $t = 4.0089$, $p < 0.001$). In hypothesis 5, results indicated a negative relationship between relational norm and role conflict ($\beta = -0.317$, $t = 2.3891$, $p < 0.01$), and a negative relationship between relational and role ambiguity ($\beta = -0.495$, $t = 4.8265$, $p < 0.001$). No support was found for hypothesis 3.

Explained variance for task performance was 35.4%, for affective commitment it was 19.1% and for turnover intention it was 31.5%. Explained variance for role conflict was 35.2% and for role ambiguity 26.4%. There are no community standards for what is an acceptable level of explained variance (Gefen et al., 2000). In the basic research of fields like sociology, levels under 10% are commonly reported. Studies published in top-ranked IS/IT journals explain variance in the 20 – 30% range (see Ho et al., 2003, Bock et al., 2005 for samples of such studies). In this research, the explained variances found were around these levels.

5. DISCUSSION OF RESULTS

This research identified three potential outsourcing arrangement stressors, applied these stressors to investigate the transplants' level of role stress, and found support for most of the relationships proposed in the research model through a survey in one outsourcing vendor.

5.1 Effects of role stress on work outcome

Role stress are generally conceptualised using the two interrelated constructs role conflict and role ambiguity (e.g., Nygaard and Dahlstrom, 2002, Joseph et al., 2007). Role conflict occurs when transplants believe that the expectations and demands of two or more members of their role sets are incompatible (e.g., role expectations from a vendor manager and a client manager). Strength of ties between a transplant and client is not unlikely because of previous employment. Role ambiguity relates to the perceived lack of information transplants need to perform their roles adequately as well as their uncertainties about expectations of different role set members. The business relationship between client and vendor organisation is negotiated over time during the outsourcing project, but transplants experience an overnight change in their roles as they are transferred from client to vendor organisation.

Lacity and Willcocks (2000) identified six IT outsourcing phases as scoping, evaluation, negotiation, transition, middle, and mature phase. In this survey, data were collected in the transition phase of the selected outsourcing arrangement. On large contracts, it is not unlikely that transition activities may last from 18 months to more than 2 years (Lacity and Willcocks, 2000). This includes relationship activities such as establishing post-contract management structures and processes, but also implementing, consolidation, rationalisation, and standardisation. It is not unlikely that transplants perceive a stressful work situation in this period.

The linear influence of role stress on work outcomes has been examined, suggesting that role stress has significant dysfunctional effects on transplants' task performance. The influences of role stress on task performance were hypothesised to be negative for both role conflict and role ambiguity. As expected, the path from role ambiguity to task performance was negative, meaning higher levels of role ambiguity decreased task performance. Contrary to what was hypothesised, the path from role conflict to task performance was positive: meaning a higher level of role conflict was associated with higher levels of task performance. The Yerkes-Dodson Law has been used in describing an inverted U-shaped curve relating role stress to task performance (Singh, 1998). Thus, one might speculate that increased stress improves performance only up to a certain point, after which a further increase in stress is linked with decrements in performance levels. The Yerkes-Dodson Law may explain the positive relationship between role conflict and task performance found in the survey, because heightened role conflict improved task performance.

The linear influence of role stress on transplants' turnover indicated a behavioural intent to leave the vendor organisation. Transplants might actively start looking for new jobs because they do not see many prospects for the future in the vendor organisation. However, an intention to leave is not necessarily followed up by turnover behaviour (Joseph et al., 2007).

Another aspect is the influence of roles stress on transplants' affective commitment. Results indicate that transplants do not feel "emotionally attached" to the vendor organisation or they do not feel a strong sense of belonging to the vendor company. They did not apply for their positions at the vendor, but they were moved from the client company by a management decision. As such, they might not feel as "part of the family" in their new organisation.

5.2 Effects of outsourcing arrangements stressors

Client managerial persistent expectations had a significant, positive effect on role conflict; meaning, higher levels of expectations gave higher levels of conflict. As client managerial expectations persist, transplanted IT workers perceive role conflict. The phenomenon of client managerial persistent expectations was identified by Ho et al. (2003). They also found that persistence of expectations had a distinctive positive influence on the client managerial perception of contractor performance. In this research, higher levels of persistent client managerial expectations resulted in higher levels of role conflict, which, in turn, were positively related to task performance. An explanation might be that transplants try to satisfy both previous client manager and new vendor manager. This indicates the presence of an outsourcing arrangement stressor.

Relational norms were found to have a significant negative effect on role ambiguity, meaning that more clearly defined roles and procedures, i.e. higher levels of relational norms, reduced the perception of uncertainty about a transplant's role. Kern and Blois (2002) studied the establishing of norms of behaviour in a single IT outsourcing relationship. They concluded that the need for establishing relational norms was not recognised by the parties involved, and that the failure of the consortium was due to the issue of norms. In this research, perception of relational norms had a significant negative impact on role ambiguity. Meaning, the better the roles of behaviour were defined, the less confusion the transplant had about his or her role. This points to relational norms as an outsourcing arrangement stressor. The proposed negative

relationship between relational norms and role conflict was also significant. Well-defined roles of behaviour indicated that transplants felt less role conflict.

Despite the importance of knowledge complementarities in IT outsourcing relationships, this research found no significant relationship between complementary core competencies and transplants' role stress. In a recent study, Kim et al (2010) examined the influence of partner knowledge on the effectiveness of IT outsourcing success. Results from their study showed that potential knowledge complementarities, conceptualised as a multidimensional construct encompassing knowledge types (similar and specialised) and knowledge domains (business and IT), were significantly associated with IT outsourcing success measured at a firm level. This may indicate a possible direct relationship between individual level complementary core competencies and work outcome.

5.3 Limitations

Although the empirical data collected largely supported the proposed model, findings must be interpreted in light of the study's limitations. First, this research did not use cross-sectional data, and thus potential time constraints could not be investigated without further analysis. The group of transplants had been transferred approximately 7 months prior to the survey. This should be analyzed further, e.g., it could be interesting to see if differences could be found when asking transplants later or closer to the transfer and even right before the transfer. Second, the respondent's work outcome was measured as self-perception and these perceptions may not have corresponded exactly with the objective facts. In this research, transplants' task performance could potentially have been rated by supervisors, peers, and even by client managers or users. But academic literature finds no support for a low correlation between self-report and objective measures of performance; nor does it support a high correlation between managerial evaluations and objective measures of performance (e.g., Scullen et al., 2000, Sharma et al., 2004). Whereas performance ratings by supervisors or

clients help rule out the validity threats of the self-report and mono-methods approach, the research mentioned above suggests that performance ratings conducted by supervisors may be even more biased than transplants' self-reported measures. Consequently, it is far from obvious that the extra effort involved in gathering data by supervisors could have produced better performance data.

Third, because a limited sample of transferred IT workers was used, caution is necessary in making generalisations without additional empirical testing of the model. According to Green (1991), sample size can be determined if three values are specified: alpha, the probability of committing Type I error (i.e., incorrectly rejecting the null hypothesis); power, one minus the probability of making a Type II error (i.e., not rejecting a false null hypothesis); and effect size, the degree to which the criterion variable is related to the predictor variables in the population. To conduct power analysis for this research, choices of values for alpha, power, and effect size were made. Alpha was set at 0.05, the traditional level of significance. Power was set at 0.80, a value proposed as appropriate for a wide range of behavioural research (Green, 1991). Effect size was thought to range between small (0.2) and moderate (0.5). A typical study in the behavioural sciences would have a moderate effect size (Green, 1991). Due to the partial nature of the estimation procedure in PLS, where only a portion of the model is involved at any one time, only that part requires the largest multiple regression needed to be found. Looking at the model specification, the dependent latent variable with the largest number of independent latent variables influencing it are role conflict and role ambiguity, with three paths going into these variables. Thus, the largest regression at any one time consists of three independent variables. Looking up the power table provided by Green (1991), assessing a moderate effect size, a minimum sample size of 73 is needed to obtain a power of 0.80. With a large effect size, the sample requirement drops to 31. PLS analysis, with a sample size of 65, had no problem detecting structural paths up to 0.495.

6. CONCLUSION AND IMPLICATIONS

The objective of this study has been to add to the collective understanding of managing IT outsourcing relationships. In conclusion, this study recognised transplants as an important stakeholder group that is affected by, and affects the IT outsourcing arrangement in terms of their work outcomes. In this research, two outsourcing arrangement stressors, measured as client managerial persistent expectations and relational norms, were found to influence transplants' role stress. Findings showed that two dimensions of role stress, role conflict and role ambiguity, influenced transplants' work outcome, measured as task performance, affective commitment, and turnover intention.

Accordingly, this study (1) brought to the surface potentially salient outsourcing arrangement stressors, (2) applied these stressors as antecedents to transplants' perception of role stress, and (3) investigated the individual experience of role stress influencing their work outcomes. Each of these points represents a significant contribution to the collective understanding of transplants' situation in IT outsourcing relationships. The findings are applicable to IT outsourcing relationships, and for other types of outsourcing, where transfer of personnel is a part of the relationship.

Other researchers should examine the findings through more rigorous research design. As this research was conducted among transplants in one outsourcer, studies can be conducted among outsourcers in different countries and industries, or even within the same country and industry but with an outsourcer having different transition activities. Future research should also consider data collection from various sources, e.g., supervisors, peers, and even by client managers or users. Future studies can also identify additional outsourcing arrangement stressors and examine more thoroughly the transplants' responses to role stress.

Although the context, pattern of results, and method limit the extent to which generalisations can be drawn from this research, some tentative managerial recommendations should be acknowledged. Stress management interventions should be initiated for individuals and the organisation as a whole (Cooper et al., 2001). First, managers should try to eliminate or reduce outsourcing arrangement stressors, hence alleviating pressures placed upon individual transplants. Intervention activities may include relationship alignment, job redesign and role restructuring. Second, managers should focus on stress management training to alleviate the impact of outsourcing arrangement stressors on transplants. Intervention activities should be targeted at individual level to increase transplants' awareness of role stress and to enhance their personal coping strategies. This may necessitate investments in communication and information sharing, coaching and personnel development. Finally, managers must be prepared to start rehabilitation of transplants that have suffered as a result of stress in the workplace. The transfer of employees from client to vendor organisation is recognised as a critical issue in IT outsourcing relationships. As such, stress management interventions should be a part of the management agenda.

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Figure 1: Research model

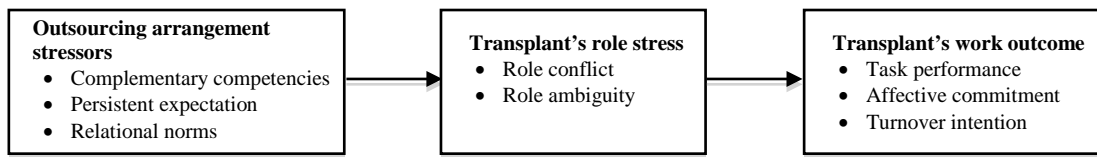
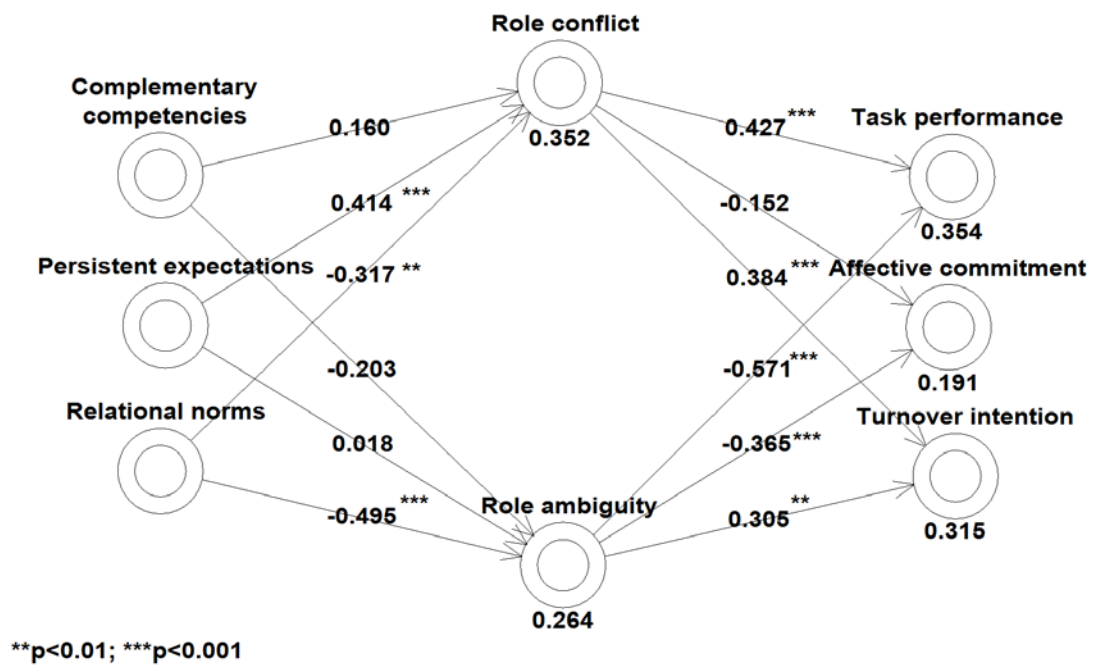


Figure 2: Path coefficients of PLS analysis



Appendix A – Questionnaire items

Construct	Item	Statistics
Transplant's complementary core competencies	<ol style="list-style-type: none"> 1. I contribute different capabilities to [client company] 2. I have complementary strengths that are useful to [client company] 3. I have separate abilities that, when combined with [client company's] capabilities, enable them to achieve goals beyond their individual reach 4. I have the capability of envisioning [client company's] business processes which technology makes possible 	Alpha = 0.678 Mean = 5.713 S.D. = 0.812
Client managerial persistent expectation	<ol style="list-style-type: none"> 1. Be more willing to work extra hours 2. Perform my job more reliably 3. Volunteer to do more tasks over and above the service level agreement 4. Invest more in improving current skills to serve them better 5. Be more willing to put in a full day's work for a full day's pay 6. Suggest more initiatives on technology issues to the [client company] 	Alpha = 0.887 Mean = 4.208 S.D. = 1.453
Relational norm	<ol style="list-style-type: none"> 1. Flexibility in response to requests for changes is a characteristic of this relationship 2. The parties expect to be able to make adjustments in the ongoing relationship to cope with changing circumstances 3. When some unexpected situation arises, the parties would rather work out a new deal than hold each other to the original terms 4. The terms of an ongoing transaction are not renegotiable under any circumstances (r) 5. In this relationship, it is expected that any information that might help the other party will be provided to them 6. Exchange of information in this relationship takes place frequently and informally, and not only in accordance with a specified agreement 7. It is expected that parties will provide appropriate information if it can help the other party 8. It is expected that we keep each other informed about events or changes that may affect the other party 9. Problems that arise in the course of this relationship are treated by the parties as joint rather than individual responsibilities 10. The parties are committed to improvements that may benefit the relationship as a whole, and not only the individual parties 11. The parties in this relationship do not mind owing each other favors 12. An important feature of this relationship is that neither party would do something damaging to the other party 	Alpha = 0.882 Mean = 4.224 S.D. = 1.133
Role conflict	<ol style="list-style-type: none"> 1. I receive assignments without the manpower necessary to complete the tasks 2. I have to circumvent rules or policies to complete assignments 3. I receive incomplete requests from two or more people 4. I am often given assignments without adequate resources and materials to execute them 5. I work on unnecessary tasks for [client company] 6. I have to work under vague directives or orders 	Alpha = 0.778 Mean = 3.942 S.D. = 1.205
Role ambiguity	<ol style="list-style-type: none"> 1. I feel certain about how much authority I have (r) 2. I know what my responsibilities are (r) 3. I know exactly what is expected of me (r) 4. I have just the right amount of work to do (r) 5. I know exactly what is expected of me (r) 6. Expectation of what has to be done is clear (r) 7. I perform work that conforms with my values (r) 	Alpha = 0.772 Mean = 3.508 S.D. = 1.035
Task performance	<ol style="list-style-type: none"> 1. I try to work as hard as possible 2. The quality of my work is top-notch 3. I intentionally expend a great deal of effort carrying out my job 4. I often put extra effort in carrying out my job 5. I almost always perform better than an acceptable level 6. I often perform better than expected from me 	Alpha = 0.839 Mean = 5.262 S.D. = 0.852

Affective commitment	<ol style="list-style-type: none"> 1. I do not feel "emotionally attached" to [vendor company] (r) 2. I do not feel a strong sense of belonging to [vendor company] (r) 3. [Vendor company] has a great deal of personal meaning for me 4. I really feel as if [vendor company's] problems are my own 5. I do not feel like "part of the family" at [vendor company] (r) 6. I enjoy discussing [vendor company] with people outside it 	Alpha = 0.769 Mean = 4.040 S.D. = 1.194
Turnover intention	<ol style="list-style-type: none"> 1. I will probably look for a new job in the next year 2. I may quit my present job next year 3. I will probably actively look for a new job within the next three years 4. I often think about quitting my present job 5. I do not see much prospects for the future in [vendor company] 	Alpha = 0.859 Mean = 3.935 S.D. = 1.590

Note: All measures employed a seven-point Likert scale from "1" to "7"