

Formal Contractual Agreements: A Transaction Cost Study of Tanzania Firms

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Abstract

This is exploratory study that aims at examining formal contractual agreements for firms in Tanzania using Transaction cost theoretical approach. Transaction cost studies have rarely being done on firms in Africa and Tanzania in particular. Sampling frame used is from Tanzania revenue authority records for registered business 2008-2010. The study is centered on business - to business buyer -seller relations. Primary data were collected from buying side of this business relationship. Random sample of n =150 buyers were contacted through telephone calls and questionnaire were delivered personally. The response rate was about 65%.

The findings suggest Transaction cost theoretical framework to be highly consistent with previous findings in western setting in spite of using Tanzania as context. However there were some slightly differences which could partly be explained by study limitations. This study is limited in terms of not using variables like culture and institutions in connection to how they influence this theory.

Keywords: Formal contractual agreements, Asset specificity, Environmental uncertainty, Buyer dependence

1. Introduction

Transaction cost analysis (TCA) has been used in connection to resource dependence theory (RDT) and relational contracting theory (RCT) to predict types and context of relations. For instance Bucklin and Sengupta (1993) found that under conditions of high levels of specific investments, co-marketing alliance partners reduce power imbalances through formal contracts. Specific assets involve assets that cannot be redeployed without sacrifice of productive value should contracts be prematurely terminated (Williamson, 1985). A basic premise of TCA is that the risk of opportunism creates a need for formalized governance mechanisms such as formal contracts or direct control (Rindfleisch and Heide, 1997). TCA predicts that exchange relationships with high asset specificity tend to use more formal contracts for governance when the transaction cannot be internalized. The extent of formal contractual agreement may also be influenced by the uncertainty surrounding the exchange. Such environmental uncertainty creates adaptation problems, in the sense that previous agreements need to be renegotiated. While Macneil (1980) suggested that environmental uncertainty increases the need for formal contracts, empirical studies have shown mixed results. Finally, resource dependence theory (Pfeffer and Salancik, 1978) prescribes under which circumstances a power-advantage and power-disadvantage exchange partner are motivated and able to establish a formal contract.

Most empirical studies on the antecedent to formal contractual agreements involve large companies from a western setting. The objective of the present study is to introduce a new setting by studying supplier-distributor relationship in a developing country, and to investigate whether the TCA predictions for formal contractual agreement are valid under this context.

2. Theoretical Background and Hypothesis

2.1 Formal contractual agreements.

Formal contracts are distinct from other forms of contracts due to legal enforcements (Macneil, 1978). Ongoing contractual relations create expectations that future exchange will occur in partially predictable patterns, simply through the dynamics of the existing relations whether or not hierarchical (Macneil, 1980:8). Formal contracting addresses the moral hazard problems inherent in interfirm deals via explicit terms designed to achieve incentive alignment. Typically, a formal contract is highly customized to a specific transaction, it is detailed about the exchange partners responsibilities and obligations, it is written, and quite often it requires legal work. Formal

contracts are partly shaped by how often transaction takes place between independent firms (Ryall and Sampson, 2009). Relational mechanisms focus on social processes that promote norms of flexibility, solidarity, and information exchange (Heide and John, 1994). Without ownership and cross equity involvement, the relationships between firms are mostly based on contracts or vertical coordination (Buvik & Haugland, 2005).

Williamson (1985) noted that parties to an asset-specific exchange have a mutual interest in perfecting the contracting relation. The question of contractual agreement with respect to asset specificity is concerned with safeguarding. Joskow (1988) noted that the complexity dimension as well as specific asset may increase the use of formal contracts. In the same line of thought, Poppo and Zenger (2002) suggested that the more complex the contract is, the greater is the specification of promises, obligations, and processes for dispute resolution. There are previous studies which have examined contractual agreements and environmental problems (Williamson, 1985; Manolis et al, 1997; Leiblein & Miller 2003; Ivens, 2005). Furthermore, dependence has been suggested to impact the use of formal contracts (Heide, 1994; Buvik and Reve, 2002). This study will observe these connections but in a different setting in terms a developing country, where the cultural, institutional, and business-to-business types of relationship may differ from the western countries.

2.2 Effects of buyer dependency

Resource dependence theory views inter-firm governance as a strategic response to conditions of uncertainty and dependence (Pfeffer and Salancik, 1978). Heide and John (1988) noted that the dependency arising from specific assets is unique from other aspects of dependence. When buyer is dependent in the relationship, she/he will have less power to enforce the agreements or negotiation with the supplier and this will negatively affect formal contractual agreements. These findings are also supported by Buvik and Reve (2002) where they confirmed a strong negative effect of buyer dependence on formulation of contractual agreement when buyer has committed specific investments in the relation.

Dependency may, however, also be attributed to other causes than specific assets, for instance when the buyer has no or few alternative suppliers of critical resources and/or when the switching costs of changing supplier would be high. Under such circumstances, the buyer (as dependent) is likely to prefer a formal contract. This desire is not, however, equivalent to the *ability* to obtain such a contract. The power-advantage organization would then lose part or all of its discretion over the allocation of its critical resources to the dependent party. Accordingly, the dominant exchange partner (supplier) is not likely to agree on a formal long-term contract (Casciaro and Piskorski, 2005). Thus, we hypothesize:

H₁: Buyer dependence has a negative effect on formal contractual agreement.

2.3 Effect of interaction between buyer asset specificity and buyer dependence

Williamson (1985) viewed asset specificity to be “durable investments” that are deployed for the facilitation of a transaction. This could involve one side of the relationship (unilateral) or both sides (bilateral). Human assets (skills, knowledge) as well as physical assets (equipments, buildings) are included in this, but the difficulties in redeployment has been used to characterize these investments’ specificity (Heide, 1994). While other studies have found transactions involving asset specificity to prefer formal contracts (Poppo and Zenger, 2002; Lui et al, 2009), others have indicated that such a relationship is contingent upon dependence (Buvik & Grønhaug, 2000; Buvik & Reve, 2002). We argue that when both buyer asset specificity and buyer dependence are present in a relationship, a need for formalize contractual agreement is heightened. Thus we hypothesize:

H₂: When buyer is dependent and he has made specific investment in the relation with supplier, there will be a positive impact on formal contractual agreement.

2.4 Effects of environmental uncertainty

Noordewier (1990:8) described the concept of environmental uncertainty as “unanticipated changes in circumstances surrounding an exchange”. Bensaou (1999) on the other hand coined this concept as external uncertainty and he defined it as unanticipated changes in circumstances surrounding an exchange relationship. While Bensaou (1999) suggested technological uncertainty as a key component of external uncertainty, Manolis et al. (1997) noted market uncertainty and regulatory environmental uncertainty as the key components of external environmental uncertainty. When technological uncertainty is high, firms are likely to retain the flexibility to terminate relationships and thereby to avoid formal contracting (Geyskens et al., 2006). Poppo and Zenger (2002) found a negative association between technological uncertainty and formal contracting. Ivens (2005) agreed on the problematic impact of environmental uncertainty in establishing formal contractual agreements. This leads to the following hypothesis:

H₃: Environmental uncertainty has a negative impact on formal contractual agreement.

3. Research Methods

3.1 Research Background

The empirical context of the study is Tanzanian producer and distributor firms, representing suppliers and buyers respectively. The sampling frame was based on Tanzania revenue authority records for registered business of 2008-2010. Data were collected from distributor (buyer) firms. A random sample of n=150 buyers were contacted by phone call, of which n=130 were interested to participate. The questionnaires were delivered personally to the distributors. There was opportunity to explain the questions, to ascertain that the respondents were knowledgeable about the phenomena under study. The respondents were asked to choose major supplier whom they would use to answer the questions. The final sample comprised 97 buyers, of which 87 were early respondents while 10 were late respondents. The response rate was about 65%.

3.2 Sample Characteristics

25.8% of firms involved from the study were established between 1990- 2000, 73.2% were firms established after year 2000, and the rest were established before 1990. With respect to business turnover, 30.9% of firms had an annual turnover of up to Tshs 5 million, 55.7% with annual turnover of between 5 to 200 million (exclusive), 12.4 had annual turnover of between 200 to 800 million (exclusive), and the rest with above 800 million (5 Tshs million=20.000 NOK).

3.3 Measurement

3.3.1 Formal contractual agreement

Previous studies have used five items, 7-points likert scale in measuring this construct (Buvik & Reve 2002). This study used three items (Table1), 7- points likert scale with "strongly disagree and strong agree" statements. After factor analysis (principal component) all items loaded in a single component. Reliability analysis indicated a measure of $\alpha = 81.5\%$ which is quite above the cutting point (0.6). The findings were confirmed by KMO and Bartlett's test which measured at 0.648 and $\lambda^2 = 117.283$ (significant at $p < .001$) respectively, implying a very high correlation among the measured items.

3.3.2 Buyer asset specificity

Muti item scales are used in measuring this concept (Stump and Heide, 1996 Anderson, 1985; Rokkklan et al, 2003). In this study buyer asset specificity was measured using four item (Table1) in a seven-point likert scale, with statements anchored by "strongly disagree" and "strongly agree"(items are listed in table3). After factor analysis (principal component) all factors loaded into one factor. The reliability of this component measured $\alpha = 93.35\%$ which is very significant. KMO was 0.796 also indicates a satisfactory correlation level of the items which justified for factor analysis. Again Bartlett's test indicated $\lambda^2 = 501.174$ which was significant at $p < .001$, rejecting the null hypothesis that the correlation matrix was identity matrix. The buyer asset specificity was abbreviated by term BUASP in the analysis.

3.3.3 Buyer dependence

Previous studies have measured this concept using muti item scale (Heide, 1994; Kaufmann and Stern, 1988; Buvik and Reve, 2002). This study used four items (table 1) in 7-points likert scale with statements anchored "strongly disagree" and "strong agree". After factor analysis the four items loaded in a single component. Further reliability analysis indicated $\alpha = 96.98\%$ which was quite significant. KMO and Bartlett's test measure at a level of 0.854 and $\lambda^2 = 507.724$ (significant at $p < .001$) respectively, supporting the idea of high correlation among variables and the necessity for proceeding to factor analysis. The concept of buyer dependence is abbreviated by BUDEP in the analysis.

3.3.4 Environmental uncertainty:

Multi items scales have mostly been used in many studies for this variable (Anderson, 1985, Noordwier et al, 1990). Some items have been used to reflect instability (Anderson, 1985). This study used both items indicating technology and volume uncertainty (table1). After factor analysis three items loaded into one component. Further the reliability analysis indicated $\alpha = 82.78\%$ which is quite significant. KMO and Bartlett's test measured 0.859 and $\lambda^2 = 417.069$ (significant at $p < .001$) respectively, implying a significant correlation of the terms in measuring the concept. This concept in the analysis was abbreviated as ENVU.

4. Empirical Results

In order to test the hypotheses, ordinary least square (OLS) regression model was estimated. The regression results are shown in Table 2. The overall model fit was quite satisfactory ($R^2_{Adj} = .205$ F (3, 90) = 5.23; $p < .01$).

Hypothesis 1 suggested a negative relationship between buyer dependence (BUDEP) and formal contractual agreement (FCA). Table 2 showed that buyer dependence to have a significant negative impact ($t=3.75$; $p=0.01$) on formal contractual agreement, thus supporting the hypothesis.

Hypothesis 2 predicted interaction effect between asset specificity and buyer dependence (BUASPBUEP) to be positive. This hypothesis was supported with the results from the model in table 1 ($t=1.801$; $p=0.037$). The results of the model in table 1 have also shown buyer dependence to have a negative association with formal contractual agreement but its interaction with asset specificity cause a positive impact.

Hypothesis 3 suggested a negative impact of environmental uncertainty on formal contractual agreement. Results from model in table 1 indicated a negative effect ($t= -1.05$; $p = 0.15$). Though the sign was consistent as predicted, the result was not significant. This implies a partial support for this hypothesis.

Correlation matrix from table 3 does not indicate any problem of multicollinearity which suggests that the results are not affected by strong close association among the variables. The model in table 2 has included other interaction variables so as to find out whether they have any significant influence on dependent variable.

Summary of the formal contractual model can be demonstrated as follows;

$$\Delta FCA = .531 + 1.352ENVU + 1.583BUDEP - 2.6BUDEPENVU \\ \Delta BUASP$$

5. Discussion

Correlation analysis in Table 3 indicated formal contractual agreement to be negatively correlated with buyer dependence. These results were confirmed in the regression model (table 1). From the regression model from Table 2 we can also see that buyer dependence by itself does not lead to formal contractual agreement, but the interaction effect between dependence and asset specificity was the one which determined formal contractual agreement. These findings on negative effect of buyer dependence on formal contractual agreement are consistent with Casciaro and Piskorski (2005) argument that of resistance from dominant partner in engaging contractual agreement when there is imbalance. Contracts are not seen to be the key solution to problems facing exchange partners (Buvik & Grønhaug, 2000), but to extent that there is dependence and asset specificity deployment there will be a need for such formalization. When buying firm is dependent on the supplying firm, the vulnerability increases and the buying firm will be in more disadvantage side. A tentative explanation could be that buyer dependence does not primarily stem from specific investments. In a Tanzanian setting, dependency could reflect lack of alternative suppliers. These findings are partly consistent with other studies which were conducted in developed economies. For example Buvik and Reve (2002) found a positive association of specific investment on formal contractual agreement, but the effect was contingent on buyer dependence. Nakhla (2003) and Ivens (2005) found environmental uncertainty to have a negative impact on formal contractual agreements. This study indicates a negative relationship between formal contractual agreement and environmental uncertainty (H3) but was not significant (partially supported). Lack of significant findings on H3 does not indicate a contradiction with current theoretical literature because the direction of relationship was the same. The significant support is partly limited by sample and other methodological issues which could be addressed in other studies.

6. Study Limitation

This study acts an exploratory finding because of sample limitation. The study has not included other variables such as cultural and institution. Such variables could help in explaining the way that Transaction cost is shaped from Africa context. I suggest future studies to address these limitations for better findings. The model which was used in regression analysis did not use alternative models. The regression model used only the hypothesized variables and their interaction without including other controls. This has been partly influenced by theoretical assumption on the influence of these variables. The use of these findings should take account of these limitations.

7. Conclusion and Implications

This study was done in a developing country (Tanzania) where the institutional framework and business culture and practices do differ significantly from western countries. The major findings from the Tanzanian business-to-business relationships do however coincide with previous studies from western countries. These preliminary findings suggests that the firms from western countries looking for possible outsourcing to firms in Tanzania can still draw upon current Transaction based theoretical assumption but this should be contingent upon issues like culture, and institutions.

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Table 1. Summary of the measures

CONSTRUCT	ITEMS (Measured in 7-points likert Scale)
Formal Contractual Agreements (FCA) $\lambda^2=117.283$ $p < .01$ $\alpha = 81.5\%$ KMO = .648	Firm agreements stipulate all aspects concerning exchange of information about price and market conditions between our firms; Written contracts stipulate all aspects regarding the tasks and influence of two parties in the quality control of the product we purchase from this supplier; Written contracts stipulate all aspect regarding the order selection of sub-suppliers for the product we order from this supplier. <i>Sourced from Buvik & Reve (2002)</i>
Buyer dependence (BUDEP) $\lambda^2=507.724$ $p < .01$ $\alpha = 96.98\%$ KMO = .854	If we decide to stop purchasing from this supplier, we could easily replace this volume with purchase from another supplier; There are many competitive suppliers of this product; Our firm will not have difficulties in using product from another supplier; Changing to another to another supplier will require us less effort and cost <i>Adopted from Heide (1994), Buvik & Reve (2002 Kaufmann and Stern (1988).</i>
Buyer Asset specificity (BUASP) $\lambda^2=501.174$ $p < .01$ $\alpha = 93.35\%$ KMO = .796,	We have made significant investment in equipment dedicated to our relationship with this supplier; We have made extensive internal adjustments in order to deal effectively with this supplier; Training our people to deal with this supplier has involved substantial commitments of time and money: Our logistics system have been tailored to meet the requirements of dealing with this supplier <i>Adopted from Anderson (1985) and Stump and Heide (1996)</i>
Environmental Uncertainty (EU) $\lambda^2=417.069$ $p < .01$ $\alpha = 82.78\%$ KMO = .859	Demand for this product varies continually; Our most important competitors are regularly carrying out product adjustment; Product we are purchasing from this supplier have high innovation rate and varies continually. <i>Sourced from; Rindfleisch & Heide (1997:42) Buvik and John (2000) Noordiwier et al (1990) and Anderson (1985)</i>

The table above indicates the summary of constructs used and all the items used in each construct. Table also gives the information about reliability and the strength of each construct.

Table 2. Regression analysis

Dependent variable: Formal contractual agreement

Variables	Unstandardized coefficients	Standardized coefficients	t-values	p values (one-tail)
Constant	3.764		1.89	0.03
BUASP	0.531	0.171	1.77	0.04
H1 BUDEP	-0.360	-0.368	-3.75	<0.01
H3 ENVU	-0.169	-0.098	-1.05	0.15
(BUASPXENVU)	1.352	2.424	1.781	0.037
H2(BUASPXBUEP)	1.585	2.617	1.801	0.037
(BUASPXBUEPX ENVU)	-2.68	-2.496	-1.749	0.042
Model Fit	F(3, 90)= 5.23 R ² _{Adj} = .205 P < .001			

The table above provides information about ordinary least square regression analysis results with coefficients, corresponding p values and the model fitness.

Table 3. Correlation matrix

	1	2	3	4	5	6	7
FCA	1	.29**	-.44**	-.17	.31**	.36**	.36**
BUASP		1	-.33**	-.019	.97**	.92**	.89**
BUDEP			1	.193	-.33**	-.49**	-.49**
ENVU				1	-.176	-.054	-.203*
(BUASPXENVU)					1	-.90**	.921**
(BUASPXBUEP)						1	.975**
(BUASPXENVUXBUEP)							1
Mean	4.25	-.39	4.39	5.37	-2.10	-1.97	-10.73
Standard deviation	1.57	.503	1.605	.905	2.801	2.586	14.588

This table gives a correlation matrix for all variables used and their corresponding mean and standard deviations. Following are meanings of the abbreviations used;

FCA = Formal contractual agreements

BUASP = Buyer asset specificity

ENVU = Environmental uncertainty

BUDEP = Buyer dependence

BUASPXENVU = Interaction of buyer asset specificity and environmental uncertainty

BUASPXBUEP = Interaction of buyer asset specificity and buyer dependence

BUASPXENVUXBUEP = Interaction of buyer asset specificity, environmental uncertainty and buyer dependence