The role of contract and relationship norms in the success of Information Technology Outsourcing

Dilek ERDOGAN[*], Nuray TOKGOZ[**]

Abstract

Information technology outsourcing provides several advantages for organizations, such as reducing the cost of ownership of IT products/services, providing rapid access to modern technologies. However, when the outsourcing relationship is not managed effectively, the desired results are not always achieved. This article aims to reveal the role of contract and relationship norms in the success of the IT outsourcing relationship, by focusing on the Turkish domestic market. Firstly, the measurement scales of the research were developed by making use of the previous studies and field interviews. Then the measurement model and hypotheses were tested using the partial least square method. It was concluded that both contract and relationship norms affect IT outsourcing success, but the contract is more effective than relationship norms for IT outsourcing success. Furthermore, it is concluded that relationship norms have a mediating effect between the contract and IT outsourcing success.

Keywords: IT outsourcing, contractural governance, relational norms, Partial Least Square (PLS), Turkey

Introduction

There is a sizeable demand for various information technology (IT) sub-industries in Turkey due to the fact that Turkey has a domestic market with a sizeable potential in the IT industry. According to TÜBİSAD Informatics Industry Association's[1], Turkey's information and communication technology sector size (including hardware, software, services, equipment and electronic communications) were 27.4 billion USD in 2018. According to the same report, Turkey's IT sector

[*]Dilek ERDOGAN is Assistant Professor at Gaziantep University, Gaziantep, Turkey; e-mail: dilekc@anadolu.edu.tr.

[**]Nuray TOKGOZ is Associate Professor at Anadolu University, Eskisehir, Turkey; e-mail: nuzkesic@anadolu.edu.tr.

[1] TÜBİSAD Informatics Industry Association's (Project Consultant Deloitte) Report (2018). Information and Communication Technologies 2017 Market Data (retrieved from http://www.tubisad.org.tr/en/images/pdf/tubisad_2018_ict_market_data_en.pdf)

(covering hardware, software and services, but excluding Communication Technologies) grew by an average of 19% annually between 2014-2018. This growth rate was higher than the growth rate of communication technologies (17%) in the same period. The mix of sector components has been trending closer to that of developed countries since 2014 and the share of value-added activities, such as software and services, has continued to grow. A remarkable increase in the IT expenses and developments of Turkey's IT industry as a developing country has caused research on IT topics in Turkey to be more significant and interesting.

Along with the constantly increasing importance of IT in business processes, many Turkish companies have started to invest in IT intensely in order to gain a competitive advantage (Deloitte Consulting Report, 2014). The largest industries contributing to Turkey's IT expenses are the public sector, banking, securities trading, manufacturing, natural resource management, communication, media and the service industry, and these account for more than 68% of total IT spending. Outsourcing of information technologies has become one of the commonly preferred methods along with the increasing importance of IT for Turkish companies. Information technology outsourcing (ITO) provides several advantages for organizations, such as reducing the cost of ownership of IT products/services, providing rapid access to modern technologies, resolving technical problems without increasing the number of staff, and enabling the company to focus on its core business (Beaumont and Costa, 2002; Gonzalez, Gascoand and Llopis, 2010; Kim and Young-Soo, 2003). However, it is not always easy for to organizations manage ITO deals because ITO also involves many risks, such as increase of dependency on the supplier, loss of knowledge of how to conduct business, generation of hidden costs of ownership, and demonstration of opportunist behaviors by the supplier (Barthelemy, 2003a; Kern and Willcocks, 2000). Due to these reasons and the like, ITO deals do not always conclude in the desired way for organizations. For instance, according to Willcocks and Lacity (1999), 38% of ITO contracts result in success, 35% do not achieve the desired aims and 27% have both positive and negative results. Deloitte Consulting Report (2012) also found through a global outsourcing survey that 48% of companies were unsatisfied with their ITO engagement (cited by Qi, 2015).

Two mechanisms exist for the governance of the ITO process, known as formal (contracts) and relational. Formal governance covers processes such as the development of formal mechanisms, i.e. contracts, service level agreements (SLAs), key performance indicators (KPIs), and the management of these mechanisms (Barthelemy, 2003a). Relational governance, on the other hand, includes the development of norms and behaviors that cover the more abstract, more humanitarian and social dimensions of the relationship to reduce the risk of opportunist behavior (Heide, 1994; Kern and Willcocks, 2000). This study aimed to reveal the effects of contracts and relationship norms in the ITO success of companies operating in the domestic market of Turkey. In the current world order,

countries that have achieved the information society by developing adequate information technologies will develop both economically, socially and politically. As a developing contry, Turkey is making significant progress towards becoming an information society. The efforts to develop an information society strategy, the development of the education system for the training of qualified IT labor force, and the realization of the e-government are some concrete examples (Bingöl *et al.*, 2019). Turkey's development in the field of IT, emphasis on the need for IT governance studies in developing countries in some studies in the international literatüre (Dibbern, Goles, Hirschheim and Jayatilaka, 2004; Lacity, Khan, Yan and Willcoks, 2010) reveals the importance of Turkey context of this study.

1. ITO and ITO success

The strategic decision by technology company Eastman Kodak in 1989 to transfer all of its data center to IBM, its micro-computer operations to Businessland, and its telecommunication and data networks to Digital Equipment Corporation and IBM had a significant impact on the business world (Loh and Venkatraman, 1992). After the positive outcome that this decision named the "Kodak Effect" (Applegate and Montealegre, 1991) had on the Kodak Company, senior management of well-known companies in the USA and other countries followed the Kodak example and started to sign ITO contracts worth hundreds of millions of dollars. Seeing the positive results of all these ITO decisions, managers soon accepted that information technologies were now easy for competitors to imitate, that they alone would not be sufficient to provide a competitive advantage, and thus started to transfer IT assets, resources and staff to suppliers. From the 1990s onward, ITO started to appear as a strategic option allowing managers to meet the IT needs of organizations (Kern and Willcocks, 2000).

ITO is defined as "A decision taken by an organization to contract-out or sell the organization's IT assets, people, and/or activities to a third party vendor, who in exchange provides and manages assets and services for monetary returns over an agreed time period" (Kern, 1997, p. 37). ITO success refers the general benefits and satisfaction obtained from the ITO, and is considered as a measure of performance of inter-organizational exchange (Grover, Cheon and Teng, 1996; Qi and Chau, 2015).

The literature generally focuses on two dimensions of ITO success: benefit and satisfaction. According to one of the leading studies by Grover *et al*. (1996) focusing on the benefit dimension of ITO success, there are three sub-dimensions of ITO success; technological, economic and strategic benefit. Economic benefits refer to the ability of a firm to utilize expertise and economies of scale in the human and technological resources of the service provider and to manage its cost structure through unambiguous contractual arrangements (Grover *et al*., 1996, p. 93). As the use of the ITO increases and IT works become more complex, companies must

continually take costs into account while trying to achieve the desired performance. Therefore, the cost advantage or economic benefit obtained by ITO are an essential dimension in the measurement of ITO success, but not an adequate indicator alone. Another dimension measuring the benefit provided by ITO is the operational or technological benefit dimension. Technological benefits refer to the ability of a firm to gain access to leading-edge IT and to avoid the risk of technological obsolescence that results from dynamic changes in IT (Grover *et al*., 1996, p.93). Technological benefits enable companies to offer operationally better IT services because using outsourcing in the field of IT allows them to achieve better performance in basic IT resources (DiRomualdo and Gurbaxani, 1998). Strategic benefits refer to the ability of a firm to focus on its core business, outsource routine IT activities so that it can focus on strategic uses of IT, and enhance IT competence and expertise through contractual arrangements with an outsourcer (Grover *et al*., 1996, p. 93). Another sub-dimension of ITO success used in the literature is satisfaction. Satisfaction is interpreted as a positive emotional state resulting from all aspects of the subject under evaluation (Goles, 2003).

2. ITO governance mechanisms

In the context of ITO, governance is defined by Kim, Lee, Koo, and Nam (2013, p. 530) as "a set of practices or activities institutionalized to reduce uncertainty and provide a better performance in the outsourcing relationship between the IT service provider and purchasing firm". Two mechanisms exist for the successful governance of the ITO process, known as formal (contracts) and relational. Formal governance in this study covers the development of "clear, formal and generally written contracts, and the management of these contracts (Barthelemy, 2003b).

As the most essential element of an ITO relationship, written contracts have several functions in the management of the relationship. Conventionally, it is considered that a relationship has been established and started between the parties officially once a contract is signed between the purchaser and the supplier (Solli-Sæther and Gottschalk, 2010). Therefore, a written contract is the mechanism that establishes a relation. One of the most important characteristics of formal governance is that it creates a common understanding between parties in terms of responsibilities and expectations, and can resolve misinterpretations and problems with the expectations of parties (Alborz, Seddon and Scheepers, 2003). In written contracts, the roles of the parties are determined clearly, and are fixed and do not change. Thanks to these contracts, a party can track if the other party is performing its liabilities. Another important function of the contract is that is provides legal protection for the parties. Parties can protect themselves by implementing the penal articles specified in the contract or taking legal actions in case of conflicts (Achrol and Gundlach, 1999).

According to the transaction cost theory, the decision to use ITO is a rational decision made by evaluating certain characteristics of the transaction (asset specificity, uncertainty, frequency). If the asset specificity of transactions is high, uncertainty is high and transaction costs are high in an ITO relationship, highly complex contracts are required in order to reduce the parties' risk of behaving opportunistically (Poppo and Zenger, 2002; Williamson, 1991). In terms of information technologies, asset specificity refers to IT products or services that require the specificity of the firm's software and hardware, and/or certain specialized knowledge (Barthelemy, 2003a). Especially in the outsourcing of IT products/services with a high asset specificity, more complex contracts are more important for businesses, because the risk of opportunist behavior by the supplier is higher in transactions with high asset specificity. In brief, presence of more complex contracts in ITO relations reduces the relationship risks related to uncertainty (Qi and Chau, 2012). Therefore, the success of ITO will increase as contracts become more detailed. The following hypothesis is suggested based on this.

H1: There is a statistically significant relation between contracts and ITO success.

Contracts have some limitations in managing the ITO relationship. For instance, the preparation of extremely complex contracts which seek to foresee all cases that might emerge in the future in order to avoid relationship risks increases the transaction costs (Poppo and Zenger, 2002). This is because the preparation of complex contracts is a difficult task and requires extra time and research by the parties (Luo, 2002). According to Simon (1957), people have limited rationalism as they do not have the mental capacity that is adequate to foresee all potential problems. Therefore, it is not possible for contracts prepared by individuals to foresee all potential cases, and all contracts are actually insufficient. Another limitation of contracts is that they are not flexible. Due to the nature of contracts, when a new demand or need that has not been specified previously by the parties emerges, it is not easy to adapt the contract to the new situation (Williamson, 1991). Negotiations must be carried out again between the parties, or an additional contract or a protocol be prepared, which increases the transaction cost (Beulen, Ribbers and Roos, 2006). Due to these limitations of the contracts, there is a need for relational governance mechanisms when the inter-organizational relationship is governed.

According to relational exchange theory, the key to identifying how effective an exchange relationship based on a deal is lies in the relationship norms emerging between the exchange parties (Macneil, 1985). Relationship norms are values shared by the parties within the exchange relationship on what the suitable behavior patterns should be for such relationship (Heide and John, 1992). Heide and John (1992) suggested that relationship norms are an upper structure that consists of flexibility, information exchange and solidarity. According to Heide and John (1992, p.35), flexibility defines a bilateral expectation of willingness to make adaptations as

circumstances change. Due to the generally long-term nature of ITO relationships, flexibility is a critical factor for the success of the relationship, because it is not possible to write down all the details in contracts (Kim and Young-Soo, 2003). According to Heide and John (1992, p. 36), solidarity defines a bilateral expectation that a high value be placed on the relationship. If there is a solidarity norm between the parties, they engage in behaviours that will benefit the entire relationship, rather than aiming for their short-term personal objectives. In a relationship that has developed a solidarity norm, the parties believe that success will be achieved if they act in cooperation and engage in behaviours that will provide benefit for the entire relationship, rather than aiming to achieve their short-term personal objectives (Cannon, Achrol and Gundlach, 2000). According to Heide and John (1992, p. 35), information exchange defines a bilateral expectation that parties will proactively provide information useful to the partner. The parties expect a clear information sharing from the other party during the exchange, because the presence of a clear information exchange in the relationship facilitates the resolution of problems and adaptation. If relationship norms are established in a relationship, these norms have become a social control mechanism that is used to promote good behaviors and prevent negative behaviors (such as opportunism). Some studies support the fact that the presence of relational governance mechanisms increases the overall success of an exchange (e.g. Poppo an Zenger, 2002; Zaheer and Venkatraman, 1995). Based on the above-mentioned, the below hypothesis has been suggested.

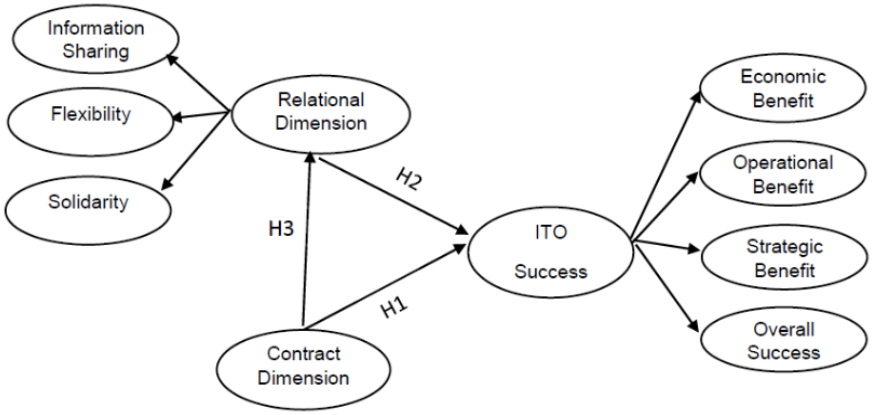
H2: There is a statistically significant relationship between the relationship norms and ITO success.

Some researchers have claimed that a well-prepared contract is effective in the development of relational governance. For instance, Poppo and Zenger (2002) claimed that formal contracts and relational governance are supplementary for each other rather than substitutionary, and tested this empirically. The results of the study showed that formal governance did not prevent relational governance, but instead, well-prepared contracts actually developed a more cooperative, long-term change relationship based on trust. This study claims that contracts can positively affect the establishment of relational norms, and suggests the below hypothesis.

H3: There is a statistically significant relationship between the contract and relationship norms.

The theoretical model of the study containing its hypotheses is shown in Figure 1.

Figure 1. Model for hypotheses tests



Source: authors' representation

3. Methodology

3.1. Field interviews

As this study is one of the first studies focusing on the field of ITO governance on the Turkish market, there was a need for field interviews in order to understand the subject in a more in-depth way within the context of Turkey in particular, and to develop the measurement scales to be used on the variables in the study. The purposeful sampling method was preferred in the selection of informants due to the fact that the nature of qualitative research makes it impossible to interview everyone or observe everything, and thus it was beneficial to select persons and events from whom in-depth knowledge could be received (Hays and Singh, 2012). Therefore, semi-structured interviews were carried out with persons in information technology manager positions thought to be able to provide detailed responses to the study questions. Supplementary to the literature review performed, these interviews focused on the perceptions of IT managers on the purchaser side regarding what role written contracts and relational governance plays in the success of ITO relationships. All the interviews were conducted between March 23-April 28, 2016 by the first author at the firms where the managers work. Appendix 1 details the roles and industries of the interviewees.

Three themes that were found as a result of the thematic analysis of interview data, and used in the development of the measurement scale (ITO success elements, critical elements of the contract, elements of relational governance), and 27 codes constituting these themes are given in the Appendix 2.

3.2. Construct development

All constructs of the study have been developed by making use of the previous studies in the literature and the codes obtained as a result of field interviews. The constructs and the associated items are given in Appendix 3.

Contract dimension is the first-order reflective construct. The studies of Cannon *et al*. (2000) and Rai, Keil, Hornyak and WüLlenweber (2012) were adapted while developing the measurement scale for this dimension.

Relational dimension is the second-order formative construct consisting of several first-order reflective constructs. Sub-dimensions of the relational dimension are information sharing, flexibility and solidarity. The studies of Heide and John (1992), Park (1995) and Cannon *et al*. (2000) were adapted for information sharing; the studies of Heide and John (1992) and Gürçaylılar (2011) were adapted for flexibility; and Heide and John (1992) and Cannon *et al*. (2000) were adapted for the solidarity sub-scale.

The dependent variable proposed in this study is ITO success and ITO success is the second-order formative construct consisting of several first-order reflective constructs. Four sub-dimensions have been set out for ITO success; operational benefit, economic benefit, strategic benefit and overall satisfaction. While developing a measurement scale for ITO success dimension, the studies of Grover *et al*. (1996) and Qi and Chau (2015) were adapted.

3.3. Data collection procedures and participants

The analysis level of this study that focuses on the IT outsourcing relation is the mutual relationship between the purchaser and supplier. The difference that can occur in the analysis unit during the data collection and theory development process in a study might cause misinterpretation of the results (Boyer and Pagell, 2000). In order not to encounter an analysis level problem in this study, the participants were guided in the questionnaire with the instruction "Please answer all the questions below considering supplier X in the IT field with whom you are associated".

The questionnaire prepared to develop the measurement scales of the study consists of three sections. The first section covered questions aimed at understanding the characteristics of the relationship between the participants and the supplier they selected, the second section contained questions prepared with the 5 point Likert scale to measure the constructs of the study, and the third section contained questions aimed at understanding the characteristics of the participant and the company where he/she works.

The survey data of the study was collected between the dates of 13.02.2017-27.02.2017 using an internet-based survey. The internet-based survey was sent to 600 manager working in the positions of "IT Manager", "IT Director", "CIO", "IT Assistant Manager", "IT Project Manager" and "IT Project Leader" in companies

operating in Turkey through direct Linkedin messages on www.linkedin.com, a professional social communication network. A total of 259 returns were received. With the exclusion of the missing values and the extreme values, 220 survey ready for analysis remained. According to ten times rules minimum sample size should be 10 times the maximum number of arrowheads pointing at a latent variable anywhere in the PLS path model (Hair, Hult, Ringle and Sarstedt, 2013, p. 52). In this study, the latent variable (contract dimension) that has the most items has 12 items (12X10=120). Accordingly, the minimum number of samples required was met. Table 1 presents the characteristics of the participants and the firms they work in and Table 2 presents the characteristics of the ITO relationship evaluated by the participants.

Table 1. Characteristics of participants and their firms

	%		f	%		f	%
Experience (year)		Education			Industry		
Less than 1	0,5	High School	2	0,9	Manufacturing and retail	72	34,3
1-3	4,1	Bachelor's Degree	133	60,5	Tourism	16	7,6
4-5	3,6	Master's Degree	85	38,6	Technology/IT	35	16,7
6-10	20,0	Number of IT Staff			E-commerce	3	1,4
11-15	18,6	1-3	45	20,5	Transportation/logistics	12	5,7
Over 15	53,2	4-10	49	22,3	Banking/insurance	27	12,9
		11-20	30	13,6	Food	10	4,8
		21-30	19	8,7	Service	35	16,6
		31-50	31	14,0			
		Over 50	46	20,9			

Source: authors' representation

Table 2. Characteristics of the ITO relationship

	f	%		f	%
Duration of Work (year)			Types of Service		
Less than 1	9	4,1	Application services	41	18,7
1-3	71	32,7	System integration	37	16,9
4-6	75	34,6	Data center management	18	8,2
7-9	28	12,9	Training and consulting	8	3,7
10 and over	34	15,7	Network management	16	7,3
Contract Duration (year)			Disaster recovery	5	2,3
Less than 1	19	8,6	PC, server management and maintenance	34	15,5

1-2	138	63,0	Company-specific application development	40	18,3
3-4	35	16,0	End-user support	13	5,9
5-6	13	5,9	Cloud services	7	3,2
Over 6	14	6,5			

Source: authors' representation

4. Results of data analysis

Exploratory factor analysis (EFA) was performed in this study firstly to determine the constructs and to eliminate the unsuitable items. The measurement model and hypotheses were then tested. For this purpose, the Structural Equation Modelling (SEM) technique was used through the Partial Least Squares (PLS-SEM) of SmartPLS 3 software (Ringle, Wende and Becker, 2015). The main reasons for choosing PLS-SEM in studies are that it is useful for small samples, complex models, and hierarchical models and focuses on prediction and exploratory research (Ringle, Sarstedtand and Straub, 2012). PLS also provides analysis of formative and reflective variables together (Chin, 1998).

4.1. Exploratory factor analysis

Exploratory factor analysis was performed on all items together. As a result of the factor analysis, 10 items with weak factor loading and multiple factor overlapping (is1, is2, is3, is4, is5, is6, flx1, sb1, sb2, sb3) were eliminated. Principal Component Analysis (PCA) was conducted on the 36 items with orthogonal rotation (varimax) and these items were grouped under six factors. The Cronbach's alpha values for all variables were over the threshold value of 0.7 (Nunnally and Bernstein, 1978). The results of EFA are provided in Table 3. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, resulting in KMO = 0.907, which was well above the acceptable limit of 0.5 (Field, 2009). Bartlett's test of sphericity = 5285,333, $p < .001$, indicating that the correlations between items were sufficiently large for PCA (Bartlett, 1954).

Three sub-dimensions including information sharing, flexibility and solidarity were suggested under the relational dimension which was a higher order construct, but information sharing sub-dimension was excluded from the analysis, as items related to the information sharing variable were collected under two different constructs as a result of the factor analysis. Four sub-dimensions including operational benefit, economic benefit, strategic benefit and overall success were suggested under the ITO success dimension, but strategic benefit sub-dimension was also excluded from the analysis as items related to the strategic benefit variable were not collected under a single construct.

Table 3. Results of exploratory factor analysis and Cronbach's Alpha

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Cronbach's Alpha
cont1	,774						
cont2	,766						
cont3	,799						
cont4	,787						
cont5	,835						
cont6	,849						**0,944**
cont7	,763						
cont8	,699						
cont9	,714						
cont10	,790						
cont11	,790						
cont12	,699						
sol1		,654					
sol2		,737					
sol3		,735					
sol4		,542					**0,864**
sol5		,635					
sol6		,761					
sol7		,759					
sol8		,762					
ob1			,628				
ob2			,871				
ob3			,866				**0,903**
ob4			,847				
ob5			,689				
ob6			,592				
flx2				,587			
flx3				,769			**0,709**
flx4				,784			
flx5				,682			
eb1					,632		
eb2					,820		**0,772**
eb3					,632		
os1						,688	
os2						,715	**0,871**
os3						,735	

Notes: Cont, contract dimension; sol, solidarity; ob, operational benefit; flx, flexibility; eb, economic benefit; os, overall success.

Source: authors' representation

4.2. Assessment of measurement model

The measurement model involves the assessment of the validity and reliability of the measures. In the measurement model, reliability was assessed by examining the composite reliability (CR), while validity was assessed in convergent validity and discriminant validity. As traditional validity and reliability assessments cannot be applied to formative constructs, the validity and reliability assessment was performed only for reflective constructs. Table 4 posits that all the constructs had a composite reliability value of > 0.70 (Bagozzi and Yi, 1988). In order to enable convergent validity, items with low factor loadings were excluded from the study (flx2, sol2, sol3, sol4, sol6, cont1, cont8, cont10, cont11, cont12, eb1, ob1). With the exclusion of these items, all Average Variance Extracted (AVE) exceeded 0.5 (Fornell and Larcker, 1981). and all variables that had factor loadings greater than 0.5 (Hulland, 1999) and the T values indicated that all loadings were significant at 0.01 (Table 4).

Table 4. Measurement model statistics

Construct	Items	Loadings	T Statistics	CR	AVE
Contract Dimension	cont2	0.788	7.652	0,936	0,677
	cont3	0.811	7.664		
	cont4	0.844	6.803		
	cont5	0.882	15.724		
	cont6	0.881	11.369		
	cont7	0.785	6.015		
	cont9	0.759	9.412		
Flexibility	flx3	0.774	5.746	0,860	0,673
	flx4	0.833	5.541		
	flx5	0.852	8.035		
Solidarity	sol1	0.781	8.430	0,858	0,605
	sol5	0.616	3.619		
	sol7	0.846	7.303		
	sol8	0.845	7.996		
Economic Benefit	eb2	0.818	8.273	0,865	0,762
	eb3	0.925	18.434		
Operational Benefit	ob2	0.877	12.390	0,933	0,737
	ob3	0.899	15.605		
	ob4	0.889	14.000		
	ob5	0.852	20.801		
	ob6	0.769	18.545		
Overall Success	os1	0.872	19.658	0,922	0,799
	os2	0.897	17.168		
	os3	0.911	17.358		

Source: authors' representation

In order to enable discriminant validity, the square roots of the stated average variance values calculated for each variable must be greater than the values of the correlation of the variable with other variables (Fornell and Larcker, 1981). Table 5 shows that the square root of AVE for each variable was greater than its correlation with other variables. Furthermore, the heterotrait-monotrait ratio (HTMT) was tested for all latent variables in order to prove discriminant validity. In Table 6, it is seen that the correlations were below the heterotrait-monotrait ratio (HTMT) threshold of 0.9 (Henseler, Ringle and Sarstedt, 2015).

Table 5. Construct correlations and the squared roots of AVE

	CONT	EB	FLX	OB	OS	SOL
Contract Dimension	**(0.823)**					
Economic Benefit	0.374	**(0.873)**				
Flexibility	0.123	0.177	**(0.820)**			
Operational Benefit	0.417	0.559*	0.231	**(0.858)**		
Overall Success	0.385	0.570*	0.216	0.605*	**(0.894)**	
Solidarity	0.285	0.204	0.421*	0.324	0.373	**(0.778)**

Note: Diagonal elements are the squared roots of the AVE scores. *Correlation coefficient is significant at 0.001 level.

Source: authors' representation

Table 6. Heterotrait-monotrait ratio (HTMT)

	CONT	EB	FLX	OB	OS	SOL
Contract Dimension						
Economic Benefit	0.443					
Flexibility	0.146	0.233				
Operational Benefit	0.456	0.656	0.262			
Operational Success	0.423	0.713	0.257	0.669		
Solidarity	0.329	0.284	0.530	0.395	0.468	

Source: authors' representation

The common method bias problem can be experienced even when the discriminant validity is satisfactory. According to Kock (2015), the occurrence of a VIF greater than 3.3 is proposed as an indication of pathological collinearity, and also as an indication that a model may be contaminated by common method bias. VIF values were calculated for all dependent and independent variables in this study, and all VIF values were found to be under the threshold of 3.3 (between 1.065-

1.943). After all these analyzes, reliability, convergent validity and discriminant validity of the measurement model were considered satisfactory.

4.3. Assessment of structural model

The structural model was tested in three stages in this study. Firstly, the structure of higher order factors was assessed, then hypotheses were tested, and lastly R^2 values, which show how much the independent variables in the model explained the variance of the dependent variable, were checked. The bootstrapping technique (5,000 resamples) was used to calculate the T statistic which measures the significance corresponding to this model's coefficients.

The higher order constructs in the model are relational dimension and ITO success. Firstly, it was tested whether the relational dimension higher order construct consisted of the flexibility and solidarity first order sub-constructs, and then whether ITO's success higher order construct consisted of operational benefit, economic benefit and overall success first order sub-constructs. In order for a higher order construct to exist, the correlations between the sub-constructs under it are expected to be high (Rai, Patnayakuni and Seth, 2006). This requirement is satisfied because the correlation coefficients between all the sub-constructs forming the relational dimension and all the sub-constructs forming the ITO achievements are significant at the level of 0.001 (Table 5). The path weights of the sub-constructs were assessed in order to evaluate the structure of the second order factor. The weights, standard deviations and T-statistics of the second-order constructs are given in Table 7.

Table 7. Structural statistics of the second-order constructs

Second-order Constructs	First Constructs	Weights	STDDEV	T-statistics	P Value
Relational Dimension	Flexibility	0,499	0.032	18.010	0.000
	Solidarity	0,684	0.057	14.422	0.000
ITO Success	Economic Benefit	0,220	0.033	7.572	0.000
	Operational Benefit	0,573	0.025	24.060	0.000
	Overall Success	0,372	0.028	13.583	0.000

Source: authors' representation

The hypotheses of the study were tested following the confirmation of the structure of the second-order factors. Table 8 presents the results of path coefficients in the research model. For all hypotheses, the path coefficient was significant at the 0.001 level, and thus all hypotheses of the study were supported. The fact that the path coefficient from contract dimension to ITO success is higher than the path coefficient from the relational dimension to ITO success shows that the contract

dimension is a more important determinant for the ITO success. Figure 2 shows all the analysis results together. The R2 values for the dependent variables of ITO success and the relational dimension are 0.291 and 0.070, respectively. As seen in Figure 2, the relational dimension and contract dimension together explains 0.291 of the variance of ITO success. The contract dimension, on the other hand, explains only 0.070 of the variance of the relational dimension.

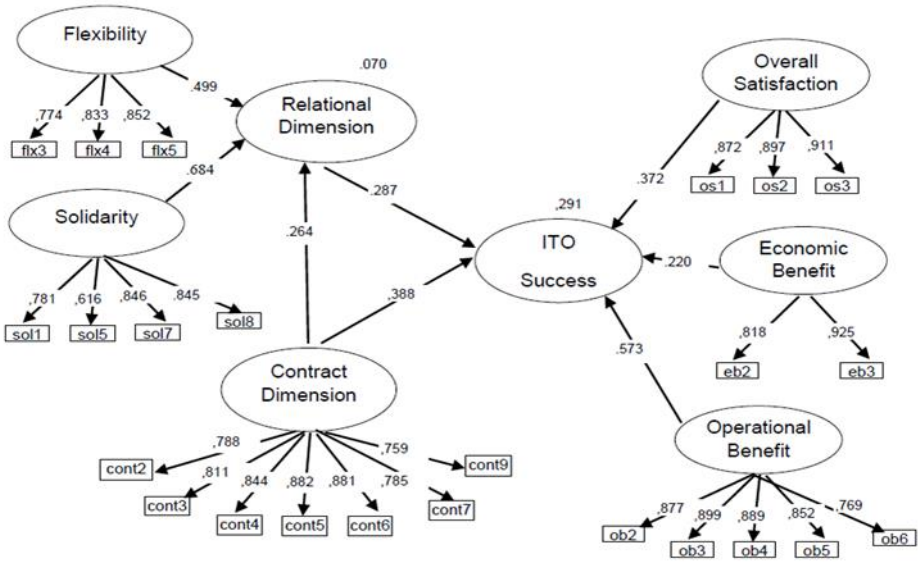
The results of the hypothesis test indicate that the relational dimension might have a mediator role between the contract dimension and ITO success. Therefore, there was a need to test the mediator effect. According to Baron and Kenny (1986), in order for a variable to undertake a mediator role, the mediator variable must have a significant effect on the dependent variable, and the independent variable must have a significant effect on the dependent variable. The effect of the independent variable on the dependent variable must decrease or totally disappear when the mediator variable is engaged. Total disappearance and reduction of this effect indicate full mediation effect and partial mediation effect, respectively. In order to test the mediating effect in this study, the total effect of contract dimension on ITO success was tested firstly. The total effect of contract dimension on ITO success was positive and significant ($\beta = 0.463$, $p \leq 0.01$). The indirect effect of contract dimension on ITO success was then tested, and it was concluded to be the mediating effect ($\beta = 0.076$, $p \leq 0.01$). Once the presence of the mediating effect was confirmed, the direct effect was assessed to test whether the mediating effect was full mediation or partial mediation. The path coefficient for the direct effect of the contract dimension on ITO success after the inclusion of the mediating variable was found to be positive and significant ($\beta = 0.388$, $p \leq 0.01$). Thus, partial mediation was concluded.

Table 8. Direct effects and hypothesis test

Paths	Paths Coefficients	T statistics	p values	Conclusion
Contract Dimension -> ITO Success (H1)	0.388	7.765	0.000	Supported
Relational Dimension -> ITO Success (H2)	0.287	4.625	0.000	Supported
Contract Dimension -> Relational Dimension (H3)	0.264	4.142	0.000	Supported

Source: authors' representation

Figure 2. Results of the PLS analysis



Source: authors' representation

Discussion, contributions and future research directions

The structure of the second-order constructs was tested firstly, before testing the hypotheses of the study. As a result, it was seen that the solidarity norm contributed more than the flexibility norm to the formation of the relational dimension. This result is consistent with Heide and John's study (1992). In their study, the largest contribution was provided by solidarity in the formation of the relational norm, which was a second-order construct, followed by information sharing, while the smallest contribution was provided by the flexibility norm.

Four sub-dimensions, including operational benefit, economic benefit, strategic benefit and overall satisfaction were suggested under the ITO success. However, EFA analysis did not confirm the strategic benefit dimension. According to the results of the confirmatory analysis, the largest contribution in forming the ITO success dimension was provided by operational benefit, followed by overall satisfaction, and the smallest contribution was provided by economic benefit. In a similar study conducted in China (Qi and Chau, 2015), no contribution of the economic benefit was found in the forming of the ITO success dimension. Even if small, economic benefit had a contribution on the Turkish domestic market; however, operational benefits have more priority. A result consistent with the literature was found on this subject; for instance, according to the results of a study

performed at Australian firms, the main reason behind the performance of ITO is to provide operational benefits, such as access to competent staff in IT field, and an increase in IT quality, rather than economic reasons (Beaumont and Costa, 2002).

All three hypotheses of the study were supported as a result of the structural model test. In today's commercial life, the presence of an exchange relation is not possible without contracts providing legal protection for the parties, and contracts have a critical role in ITO success. A significant relation was found between contracts and ITO success in this study, too (H1). The results of the study are aligned with the previous studies conducted by Li *et al*. (2010), Lu *et al*. (2015), Qi and Chau (2015), Hag *et al*. (2019) who found that contractual governance has positive and significant effects on outsourcing performance or success.

A relationship was found between the relational dimension and ITO success in this study (H2). The results confirm the findings provided by previous studies such as Ferguson *et al*. (2005), and Lu *et al*. (2015), Müller and Martinsuo (2015), Qui and Chau (2015), Hag *et al*. (2019) who found a positive and significant relationship between relational governance and outsourcing success or project performance. In the collectivism dimension specified by Hofstede (2003), Turkish culture appears to have high collectivist values. In a collectivist structure, individuals of that culture attach importance to close relationships. When considered within the purchaser-supplier relationship context, close relationships enable the formation of the solidarity norm between parties which forms the relational dimension of this study to a high extent. As a result of the structural model test, it was concluded that the relational dimension not only had a direct effect on ITO success, but also played a mediator role between the contract and ITO success.

The results of the study show that the contract dimension had a stronger effect on explaining ITO success compared to the relational dimension. Qi and Chau (2015)'s study concluded that the contract dimension did not have direct effect on ITO success. This was explained by the "Guanxi" and "Collectivism" culture of Chinese firms, and this conclusion of the study supported the hypothesis of Samaddar and Kadiyala (2006) that strengthening the relationship between the customer and vendor in Eastern cultures is more important than in Western cultures. Given the results of this study, the greater impact of the contract dimension on ITO success may result from Turkey's cultural difference. Turkey is characterized as a country that "avoids high uncertainty" in Hofstede's studies (2003). According to Sargut (2001), the tolerance for uncertainty among Turkish people is low. In societies where avoidance of uncertainty is high, individuals will try to increase written and formal rules in order to bring life to a safer situation for them (Sargut, 2001, p. 180). The low tolerance for uncertainty in Turkish culture might lead managers to prepare more complex contracts, and thus contracts may become more prominent in the management of the ITO relationship.

A relationship was found between the contract and relational dimension as a result of the structural model test (H3). This result is consistent with the literature

such as Goo *et al*. (2009), Huo *et al*. (2016) who found a relationship between relationship norms and contract. Well-defined contracts will narrow the field and the severity of the risk to which an exchange could be exposed, thus forming cooperation and trust between parties. Therefore, a well-prepared contract will also build the basis of the establishment of a good relationship. As a result of the structural model analysis, it was concluded that contract and relational dimensions together explain for 29% of the variance of ITO success.

Dibbern *et al*. (2004) and Lacity, Khan, Yan, and Willcocks (2010) have called for studies to be conducted on ITO in alternative destinations. Based upon this call, this study focusing on the Turkish domestic market was carried out to make a contribution to the literature. Investigating ITO governance mechanisms in different destinations will enable comparisons based on countries. For instance, the results obtained in this study were compared with the results of a similar study (Qi and Chau, 2015) conducted in China, and it was seen that the most significant difference between Turkey and China was the more effective contractual governance in the ITO success observed in Turkish firms.

This study also aimed to eliminate the concerns of managers on which governance tool should be used when managing IT outsourcing. Even though relationship norms are conventionally seen as an opposite mechanism to the contract, the results of the study showed the effect of relational norms on ITO success. In this context, we can say that contracts and relationship norms play an important role in the success of the ITO relationship in a mutually complementary manner, supporting Poppo and Zenger's study (2002).

According to the results of this study focusing on the Turkish domestic market, managers can be advised that during the supplier selection process operational benefits are more prominent than economic benefits in the assessment of ITO success.

This study has some limitations. One of the most important is that the assessment of the ITO relationship, which is a mutual exchange, was performed only from the perspective of a single party, the purchaser. The ITO relationship is a limited and dyadic social exchange that is established based on the direct benefit between the purchaser and vendor. Therefore, performing a similar study from the perspective of the supplier will enable a more in-depth understanding about the governance of ITO.

In this study, the contract dimension was addressed in a single dimension by showing the contract itself, i.e. its complexity level, and the fact that contracts are important in ITO agreements was supported in compliance with the literature. However, preparation of the contract content is related to the contract engagement process before the start of the relationship. Without doubt, the post-contract stage will also be important in the management of contracts. Therefore, the addition of the contract management dimension to the model will contribute to the deeper understanding of the elements contributing to ITO success.

For the relational dimension, among the relationship norms, the focus was solely on information sharing, flexibility and solidarity norms in this study. However, there are studies in the literature showing that many different relation dimensions such as commitment, trust, and resolution of conflicts impact ITO success (e.g. Lee and Kim, 1999). It is thought that conducting research on ITO success with different social variables in future studies will contribute greatly to the literature in the context of Turkey.

Even though, as a developing country, ITO practices have not totally matured yet in Turkey, the level of implementation and ITO experiences will vary for firms operating in different industries. In this study, data was collected from firms operating in different industries without making distinctions; however, a study on industry-specific ITO deals will be able to explain more specific situations.

We hope that this study focusing on Turkey will provide researchers and practitioners with an insight into ITO, and also encourage new studies on ITO to be conducted in Turkey, acting as a resource for comparative studies carried out on ITO in other regions.

Acknowledgement: This study is supported by Anadolu University Scientific Research Projects Commission with the project number 1601E035 (PHD Thesis).

References

Achrol, R.S. and Gundlach, G.T. (1999), Legal and social safeguards against opportunism in exchange, *Journal of Retailing*, 75(1), pp. 107-124.

Alborz, S., Seddon, P. and Scheepers, R, (2003), *A model for studying IT outsourcing relationships*, Proceedings of 7th Pacific Asia Conference on Information Systems, pp. 1297-131.

Applegate, L. and Montealegre, R. (1991), Eastman Kodak Company: Managing information systems through strategic alliances, *Harvard Business School Case*, 9, pp. 192-230.

Bagozzi, R.P. and Yi, Y. (1988), On the evaluation of structural equation models, *Journal of the Academy of Marketing Science*, 16(1), pp. 74-94.

Baron, R.M. and Kenny, D.A. (1986), The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations, *Journal of Personality and Social Psychology*, 51(6), pp. 1173-1182.

Barthelemy, J. (2003a), The hard and soft sides of IT outsourcing management, *European Management Journal*, 21(5), pp. 539-548.

Barthelemy, J. (2003b), The seven deadly sins of outsourcing, *The Academy of Management Executive*, 17(2), pp. 87-98.

Beaumont, N. and Costa, C. (2002), Information technology outsourcing in Australia, *Advanced Topics in Information Resources Management, 2*, pp. 192- 219.

Beulen, E., Ribbers, P. and Roos, J. (2006), *Managing IT outsourcing*, London: Routledge.

Bingöl, U., Mete, H. and Özkan, Y. (2019), Comparative qualitative analysis of Turkey and Estonia in the IT sector vacancies, *Eastern Journal of European Studies,* 10(2), pp. 197-220.

Boyer, K.K. and Pagell, M. (2000), Measurement issues in empirical research: improving measures of operations strategy and advanced manufacturing technology, *Journal of Operations Management,* 18(3), pp. 361-374.

Cannon, J.P., Achrol, R.S. and Gundlach, G.T. (2000), Contracts, norms, and plural form governance, *Journal of the Academy of Marketing Science,* 28(2), pp. 180-194.

Deloitte Consulting LLP. (2012), *Managing outsourcing risks at the early stages* (retrieved from http://deloitte.wsj.com/riskandcompliance/2014/03/03/managing-early-stage-outsourcingrisks).

Dibbern, J., Goles, T., Hirschheim, R. and Jayatilaka, B. (2004), Information systems outsourcing: A survey and analysis of the literature, *ACM Sigmis Database*, 35(4), pp. 6-102.

DiRomualdo, A. and Gurbaxani, V. (1998), Strategic intent for IT outsourcing, *Sloan Management Review,* 39(4), pp. 67-80.

Ferguson, R.J., Paulin, M. and Bergeron, J. (2005), Contractual governance, relational governance, and the performance of interfirm service exchanges: The influence of boundary-spanner closeness, J. *Acad. Mark. Sci*., 33(2), pp. 217–234.

Fornell, C. and Larcker, D.F. (1981), Evaluating structural equation models with unobservable variables and measurement error, *Journal of Marketing Research*, 18(1) pp. 39-50.

Goles, T. (2003), Vendor capabilities and outsourcing success: A resource-based view, *Wirtschaftsinformatik,* 45(2), pp. 199-206.

Gonzalez, R., Gasco, J. and Llopis, J. (2010), Information systems outsourcing reasons and risks: A new assessment, *Industrial Management & Data Systems*, 110(2), pp. 284-303.

Goo, J., Kishore, R., Rao, H.R. and Nam, K. (2009), The role of service level agreements in relational management of information technology outsourcing: An empirical study, *MIS Quarterly,* 33(1), pp. 119-145.

Grover, V., Cheon, M.J. and Teng, J. (1996), The effect of service quality and partnership on the outsourcing of information systems functions, *Journal of Management Information Systems,* 12(4), pp. 89-116.

Gürçaylılar, T. (2011), *Tedarik şebekelerinde biçimsel ve ilişkisel yönetişim: Türk otomotiv endüstrisinde bir araştırma* (Unpiblished doctoral dissertation), Akdeniz University, Antalya, Turkey.

Hair, J.F., Hult, G.T.M., Ringle, C. and Sarstedt, M. (2013), *A Primer on partial least squares structural equation modeling (PLS-SE),* London: Sage Publications.

Hays, D.G. and Singh, A.A. (2012), *Qualitative inquiry in clinical and educational settings,* New York, NY: The Guilford Press.

Heide, J.B. and John, G. (1992), Do norms matter in marketing relationships?, *The Journal of Marketing,* 56(2), pp. 32-44.

Heide, J.B. (1994), Interorganizational governance in marketing channels, *The Journal of Marketing*, 58(1), pp. 71-85.

Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), A new criterion for assessing discriminant validity in variance-based structural equation modelling, *Journal of the Academy of Marketing Science*, 43(1), pp. 115-135.

Hofstede, G. (2003), *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*, London: Sage Publications.

Hulland, J. (1999), Use of partial least squares (PLS) in strategic management research: A review of four recent studies, *Strategic Management Journal*, 20(2), pp. 195-204.

Kern, T. (1997), *The Gestalt of an information technology outsourcing relationship: An exploratory analysis*, Eighteenth International Conference on Information Systems, Atlanta, GA.

Kern, T. and Willcocks, L. (2000), Exploring information technology outsourcing relationships: Theory and practice, *The Journal of Strategic Information Systems*, 9(4), pp. 321-350.

Kim, S. and Young-Soo, C. (2003), Critical success factors for IS outsourcing implementation from an inter organizational relationship perspective, *The Journal of Computer Information Systems*, 43(4), pp. 81-90.

Kim, Y.J., Lee, J.M., Koo, C. and Nam, K. (2013), The role of governance effectiveness in explaining IT outsourcing performance, *International Journal of Information Management*, 33(5), pp. 850-860.

Kock, N. (2015), Common method bias in PLS-SEM: A full collinearity assessment approach, *International Journal of e-Collaboration (IJeC)*, 11(4), pp. 1-10.

Lacity, M.C., Khan, S., Yan, A. and Willcocks, L.P. (2010), A review of the IT outsourcing empirical literature and future research directions, *Journal of Information Technology*, 25(4), pp. 395-433.

Lee, J. and Kim, Y. (1999), Effect of partnership quality on IS outsourcing success: Conceptual framework and empirical validation, *Journal of Management Information Systems*, 15(4), pp. 29-61.

Li, J.J., Poppo, L. and Zhou, K.Z. (2010), Relational mechanisms, formal contracts, and local knowledge acquisition by international subsidiaries, *Strategic Management Journal*, 31(4), pp. 349-370.

Loh, L. and Venkatraman, N. (1992), Determinants of information technology outsourcing: A cross-sectional analysis, *Journal of Management Information Systems*, 9(2), pp. 7-24.

Lu, P., Guo, S., Qian, L., He, P. and Xu, X. (2015), The effectiveness of contractual and relational governances in construction projects in China, *International Journal of Project Management*, 33(1), pp. 212–222.

Luo, Y. (2002), Contract, cooperation, and performance in international joint ventures, *Strategic Management Journal*, 23(10), pp. 903-919.

Macneil, I.R. (1985), Relational contract: What we do and do not know, *Wis. L. Rev.*, pp. 483-525.

Müller, R. and Martinsuo, M. (2015), The impact of relational norms on information technology project success and its moderation through project governance, *International Journal of Managing Projects in Business,* 8(1), pp. 154-176.

Nunnally, J.C. and Bernstein, I.H. (1978), *Psychometric Theory*, New York, NY: McGraw-Hill.

Park, B.K. (1995), *An empirical study of partnership success between just in time manufacturers and suppliers* (Unpublished doctoral dissertation), University of Nebreska, Lincoln.

Poppo, L. and Zenger, T. (2002), Do formal contracts and relational governance function as substitutes or complements?, *Strategic Management Journal,* 23(8), pp. 707-725.

Qi, C. and Chau, P.Y. (2012), Relationship, contract and IT outsourcing success: Evidence from two descriptive case studies, *Decision Support Systems,* 53(4), pp. 859-869.

Qi, C., and Chau, P.Y. (2015), Relationship or contract? Exploring the key factor leading to IT outsourcing success in China, *Information Technology & People,* 28(3), pp.466-499.

Rai, A., Keil, M., Hornyak, R. and WüLlenweber, K. (2012), Hybrid relational-contractual governance for business process outsourcing, *Journal of Management Information Systems,* 29(2), pp. 213-256.

Rai, A., Patnayakuni, R. and Seth, N. (2006), Firm performance impacts of digitally enabled supply chain integration capabilities, *MIS Quarterly*, 30 (2), pp. 225-246.

Ringle, C.M., Sarstedt, M. and Straub, D.W. (2012), Editor's comments: A critical look at the use of PLS-SEM in „MIS Quarterly", *MIS Quarterly*, iii-xiv.

Ringle, C.M., Wende, S. and Becker, J.M. (2015), *SmartPLS 3, Boenningstedt: SmartPLS GmbH* (retrieved from http://www. smartpls. com. Lisence number: RREQ9-DQPAG-G4BES-X4GKG).

Samaddar, S. and Kadiyala, S. (2006), Information systems outsourcing: Replicating an existing framework in a different cultural context, *Journal of Operations Management,* 24(6), pp. 910-931.

Sargut, S. (2001), *Kültürlerarası Farklılaşma ve Yönetim,* Ankara: İmge Kitabevi Yayınları.

Simon, H.A. (1957), *Models of man: Social and rational: Mathematical essays on rational human behavior in a social setting,* New York, NY: Wiley.

Solli-Sæther, H. and Gottschalk, P. (2010), *Managing IT Outsourcing Performance*, New York, NY: Business Science Reference.

Willcocks, L. and Lacity, M. (1999), *Information technology outsourcing: Practices, lessons and Prospects*, Oxford: Templeton College.

Williamson, O.E. (1991), Comparative economic organization: The analysis of discrete structural alternatives, *Administrative Science Quarterly*, 36 (June), pp. 269-296.

Zaheer, A. and Venkatraman, N. (1995), Relational governance as an interorganizational strategy: An empirical test of the role of trust in economic exchange, *Strategic Management Journal*, 16(5), 373-392.