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Organizational Buyers' Ex-Ante Perceptions of Opportunism and Technological Uncertainty and the Resulting Impact on Seller/Supplier Outcomes

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ABSTRACT

This paper examines the relationship between organizational buyers' ex-ante or pre-contract perceptions of opportunism and technological uncertainty and the resulting impact on core vendor outcomes. Specifically, the paper examines whether pre-contract perceptions of opportunism and technological uncertainty negatively affect outsourced service providers' ability to establish a relationship with organizational buyers. Both opportunism and uncertainty have been manifested as key tenets in inter-firm exchanges. Extant literature defines opportunism as both ex-ante (pre-contract) and ex post (post-contract). However, existing research does not provide guidance on whether buyers' ex-ante or pre-contract perceptions of opportunism and technological uncertainty adversely affect vendors' ability to: 1) win business/contract, and 2) how it influences the post-contract buyer-supplier relationship dynamics. The research model is tested on an online panel of information technology (IT) buyers across a range of industries. Findings favor outsourced vendors in that there isn't a relationship between buyers' ex-ante perceptions of opportunism and their willingness-to-engage in a contractual relationship with a provider. Furthermore, while previous scholarly research stream found positive connection between technological uncertainty and willingness of buyers to work closely with suppliers, the findings of this study reveal that buyer cooperation is not automatic. It is important to note that the term vendor is rather broad-based in scope and represents a variety of inter-firm arrangements across manufacturing and services sectors, therefore, the implications of this study extend far beyond the traditional transaction cost analysis framework to include vendor selection and post-contract vendor management.

Keywords: *buyer-seller exchanges, buyer-seller relationship, opportunism, technological uncertainty, transaction cost analysis*

1. INTRODUCTION

The past several decades have seen enormous growth in the level of outsourcing, (both manufacturing and business process outsourcing) within the B2B marketplace (Duan, Grover, & Balakrishnan, 2009; Gholami, 2012; Lacity, Solomon, Yan, & Willcocks, 2011, Feng *et al.*, 2019). Specifically, within the information technology (IT) industry, worldwide spending on outsourced IT services reached $1.5 trillion in 2023, as estimated by Statista. From an IT services standpoint, the evolution of "As-a-Service" business models e.g., software-as-a-service (SaaS), product-as-a-service (PaaS), network-as-a-service (NaaS), etc., has led to a significant increase in the number of providers as well as adopters of such solutions as is evident from the growth of cloud-based solutions (Marston *et al.*, 2011). Outsourced IT solutions, such as cloud computing, not only allow buyers to reduce capital and operating costs (Ang & Straub, 1998; Gilley & Rasheed, 2000), they also provide tremendous flexibility to organizational users by allowing anywhere and anytime secure access to data and applications. Furthermore, such solutions also bring agility to respond to organizational IT needs and challenges in a timely manner as organizations scale-up or downsize their operations. At the same time, outsourcing comes with its own set of concerns and issues. In a recent study on outsourcing, Namadi (2023) found that while such an activity can bring about greater profitability, there is also a need to implement stringent cost controls to reap the full benefits of outsourcing.

Outsourcing involves contracting out some or all business tasks and functions which were historically performed in-house. Organizations, ranging from manufacturers to service providers, are increasingly leveraging outsourced solutions. Whether it is purchasing parts and components or contracting out business processes such as logistics, which often involve multiple layers of outsourced providers, e.g., contractors and sub-contractors (Sternberg *et al*., 2022), organizations are employing outsourcing to control overall cost structure while also improving time to market (Lahiri, 2016). In addition, outsourcing also enables organizations to tap into best-in-class solutions from a range of vendors.

However, based on transaction cost analysis research stream, most, if not all, outsourced arrangements, face the risk of post-contract opportunism and uncertainty (Rindfleisch & Heide, 1997; Wang, 1975). Transaction cost research is frequently used as the basis for studying inter-firm relationships (Ferro-Soto *et al*., 2022; Ramish *et al*., 2022). While it may not be possible to eradicate all post-contract opportunism and uncertainty, a diligent/robust pre-contract supplier or vendor evaluation process can help buying firms alleviate such risks. For instance, in the pre-contract stage, market reputation of a vendor often provides strong insights into the anticipated post-contractual behavior of a vendor (Khan *et al*., 2019). At the same time, supplier firm size and market share can further indicate to the buyer the potential of post-contract opportunism and uncertainty (behavioral and or technological) associated with a vendor.

(Khan *et al*., 2019). For example, a supplier with a dominating market share is likely to have leverage against smaller buyers and hence may invoke perceptions of anticipated post-contract opportunism among such buyers during the vendor evaluation stage.

Existing scholarly research within outsourcing (Gholami, 2012; Geyskens *et al*., 2006; Mysen *et al*., 2010; Wang, 2002) and transaction cost analysis (Brown *et al*., 2000; Jap & Anderson, 2003; Lonsdale, 2001) has evaluated and suggested various mechanisms such as performance-based contracts to reduce the likelihood of post-contractual opportunism and uncertainty. Yet their research lacks an explanation of potential linkages between buyers ex-ante perceptions of opportunism and uncertainty associated with a supplier and their inclination to award a contract. Examples of ex-ante or pre-contract opportunism could include a supplier misrepresenting its capabilities or its financial health when pitching for new business (Pham and Anh, 2024). While leading TCA scholars have proposed options such as monitoring (Wathne and Heide, 2000) and relationship-specific investments (Stump & Heide, 1996) to curb post-contractual vendor opportunism, their research does not describe the impact of ex-ante perceptions of opportunism and the effect on seller/supplier outcomes.

From an uncertainty standpoint, providers of information technology solutions as well as suppliers of industrial equipment routinely update/upgrade their products, services, and solutions thereby exposing the buyer to the risk of technological uncertainty/obsolescence or costly downtime. It is unclear, however, whether such anticipated or ex-ante technological uncertainty perceptions on part of the buyers impact their decision to engage in a contract with the vendor and whether the arrangement would be rigid, arm's length transaction or more fluid.

The continuing growth in outsourcing raises an important, yet unanswered question about a key TCA construct, opportunism: do buyer's ex-ante opportunism perceptions influence their decision to engage in business relationships with certain sellers/suppliers? Similarly, despite the extensive literature on TCA, it is also unclear if ex-ante opportunism perceptions prompt buyers to structure and execute contracts any differently than their standard business contracts with third parties. Moreover, it is unexplained whether such perceptions in the ex-ante stage discourage buyers from a post-contract collaborative or relational exchange with the seller/supplier whereby both parties work closely to accomplish the core objectives of the exchange. This study aims at finding answers to these questions pertaining to opportunism and the extent to which it affects supplier outcomes, i.e., their ability to win business.

From an outsourced product or service provider's perspective, it is important to understand how perceived opportunism and uncertainty on the part of the buyers, during the pre-contract stage, affects their willingness to establish formal or informal business arrangements with a seller. Stated otherwise, such insight helps selling organizations understand the likelihood of securing a procurement contract from the buyer and if so, how will the buyer structure the post-contract relationship, i.e., arm's length transaction or a relational exchange. For instance, despite the opportunism and uncertainty perception in the pre-contract stage, if the buyer still chooses to award business to a vendor, whether and what post-contract monitoring mechanisms may be employed and who will bear the related costs.

In addition, understanding of the relationship between these variables can also help suppliers devise marketing strategies that reduce buyers' ex-ante perceptions of post-contract opportunism while also improving their trust in the vendor. From a practitioner's standpoint, such an understanding is vital for sellers in that it can help them refine or realign their brand, product/service, marketing, sales, and customer relationship management strategies to alleviate buyers' pre-contract perceptions of opportunism and uncertainty thereby improving selection odds. For instance, instead of expending resources on product-focused advertising, suppliers (specifically small and or start-up vendors with limited market reputation), can heavily leverage testimonials from existing customers in their promotion mix to offset buyers projected/anticipated post-contract concerns associated with seller/supplier behavior.

For buyers, explanation of such linkages offers them material insight into the decision-making preferences of their peers as they pertain to supplier evaluation and selection. This in turn can help buyers, 1) reduce the likelihood of adverse selection, and 2) understand how to structure the post-contract relationship if in fact a supplier is to be chosen despite perceptions of pre-contract/anticipated opportunism and technological uncertainty.

From a theoretical standpoint, by examining linkages between pre-contract or anticipated opportunism and uncertainty and buyer's inclination to engage with a supplier, this paper also fills several gaps in existing transaction cost, outsourcing, and buyer-seller relationship literature. Extant literature in these areas (Celly *et al*., 1999; Cannon & Homburg, 2001; Paulraj & Chen, 2007; Richmond *et al*., 1992; Wathne and Heide, 2000; Weed & Mitchell, 1980) has not addressed how ex-ante perceptions of vendor opportunism and uncertainty influence buyers' selection choice and or the anticipated relationship dynamics with sellers/suppliers. Additionally, identification and understanding of such linkages can provide procurement scholars with a supplier evaluation model which integrates key variables from both TCA and relational exchange literature since both are integral to the inter-firm relationship research stream.

2. THEORETICAL BACKGROUND

Growth in domestic and international B2B outsourcing arrangements, specifically within the realm of IT, has changed the cultural and economic fabric of an organization in that while it has led to a reduction in operating costs, it has brought greater emphasis on supplier evaluation and selection as well as buyer-supplier relationship management. Within existing scholarly research, outsourcing has been examined by both transaction cost as well as relational exchange scholars (Hawkins *et al*., 2009; Jap & Anderson, 2003; Lonsdale, 2001; Mysen *et al*., 2010; Patil *et al*., 2024; Rokkan, *et al*., 2003).

TCA research cites opportunism and uncertainty—behavioral as well as technological—as conditions that favor hierarchical or in-house product and service development over outsourcing or market-based relationships (Geyskens *et al*., 2006). Specifically, from a seller's perspective, higher perceptions of opportunism in the ex-ante or pre-contract

stage can prompt buyers to eliminate certain suppliers from consideration and or prompt them to engage in arm's length or discrete transactions, thereby limiting the long-term revenue prospects for the supplier. Such discrete transactions may increase customer acquisition costs for suppliers with contracts than can span over a shorter duration and at the end of which a supplier would have to identify and attract new customers and engage in costly renegotiations with existing buyers, if the supplier were to be retained.

From a buyers' viewpoint, repeated discrete transactions likely increase the time and costs involved with supplier evaluation and selection process. In that regard, the buyers essentially face a paradox, i.e., whether to award a long-term contract to a "trusted" supplier, which in turn increases post-contract dependency (Hawkins *et al*., 2008; Wang & Yang, 2013) or engage suppliers with higher perceived pre-contract opportunism on a transactional basis.

Given the pervasiveness of B2B outsourced services, the transaction cost debate has pivoted more toward identifying and implementing effective buyer-seller relationship strategies (Carson, *et al*., 2006; Joshi & Stump, 1996) as opposed to strictly focusing on finding an appropriate mix between hierarchical vs. market arrangements. And while extant literature has focused on post-contract supplier management strategies (Stump and Heide, 1996; Wang, Li, Ross, & Craighead, 2012), there remains a gap in TCA research which evaluates the impact of key transaction cost variables of opportunism and technological uncertainty on buyers' supplier selection choices during the pre-contract (ex-ante) stage.

Similarly, the buyer-seller relational exchange research stream (Fontenot & Wilson, 1997; Rokkan & Haugland, 2002) has offered a range of supplier relationship management mechanisms such as relationship-specific investments on part of suppliers or channel members and employing monitoring tools for addressing post-contract or ex-post supplier opportunism. Still others such as Fink, Edelman, & Hatten (2006) studied the relationship between supplier technological uncertainty and its impact on customer performance, however, their research did not assess the direct impact of such technological uncertainty on buyer's motivation to select/hire a supplier.

At the same time, existing supplier selection research such as the one undertaken by Sarkis and Talluri (2002), Harmon *et al*., (1997), and Tracey and Tan (2001) provide a range of supplier evaluation criteria and metrics, their research also does not incorporate how buyers' opportunism and technological uncertainty perceptions affect their supplier selection decision. Similarly, Hoetker (2005), DeBoer *et al*., (2001), and Wu (2008), have studied supplier selection from varying perspectives, yet the research does not establish linkages between buyers' ex-ante/pre-contract opportunism and technological uncertainty perceptions and their relationship preferences with an outsourcing solution provider. Stated otherwise, TCA variables have been generally excluded from vendor selection literature.

By integrating TCA framework, buyer-seller relational exchange research, and vendor evaluation/selection research streams, this paper fills key gaps in extant inter-firm literature while also providing several insights to practitioners by testing whether buyers' ex-ante or pre-contract opportunism and uncertainty perceptions affect their willingness to engage in a contract with the seller or how they will manage the post-contract relationship. The paper also extends TCA's application beyond the make or buy decisions by studying how buyer's pre-contract perceptions of TCA variables influence core seller/supplier outcomes of securing procurement agreements and the nature of post-contract relationship with the buyer.

2.1 Construct Overview

The sections below provide an overview of scholarly research on variables of interest: opportunism, uncertainty, willingness of the buyer to: engage in contractual bonds; develop a relational exchange with a provider of outsourced solutions.

2.1.1 Opportunism

Opportunism is a key variable of interest within the inter-firm relationship research stream including transaction cost analysis (TCA). Several scholars have analyzed both the antecedents (Kang & Jindal, 2015; Sun & Xu, 2024; Wang & Yang, 2013;) as well as the outcomes it affects (Wathne & Heide, 2000) in a dyadic arrangement. Opportunism, within the transaction cost analysis (TCA) literature, involves behaviors such as deceiving, performance avoidance, and providing false or incorrect information (Williamson, 1975) and can come into play in a variety of ways in a buyer-seller exchange (Yaqub, 2009). Within the pre-contract supplier evaluation stage, opportunism can come in the form of a supplier misrepresenting their production capabilities, product functionality, warranties, or the number and type of clients it serves. Similarly, in the post-contract stage, opportunism can come in the form of "shirking" or neglect of duties (Skowronski *et al*., 2020) on part of the seller.

It is important to understand that opportunism is not limited to suppliers and can also involve intermediaries or channel members or logistics providers that a firm relies upon to get its products to customers. For instance, a retailer and or its sales personnel may not be motivated to adequately market products which carry lower margins or those that don't offer slotting fees. Similarly, a logistics provider may promise to allocate dedicated shipping resources to a manufacturer or retailer but may end-up utilizing shared resources or facilities or transportation later in the post-contract stage.

It is also noteworthy to list that opportunism (*ex-ante* and *ex-post*) on part of the buying firm, is as much a reality as deception or shirking on part of suppliers, channel members, or logistics providers. For instance, a small supplier may experience pre-and-or-post-contract opportunism which may arise from the supplier's dependency on the buyer. This study, however, only evaluates the impact of buyers' ex-ante perceptions of supplier opportunism and related outcomes, i.e., the willingness to engage in a contract with a supplier.

Extant literature discusses several antecedents of opportunism. These include the extent to which one party in the exchange is dependent on the other, bounded rationality, information asymmetry, and asset specificity or relationship-specific investments which are often made by the buyer and or the sellers.

One key factor which facilitates opportunism is the presence of information asymmetry between parties to an exchange (Mishra *et al*., 1998). Information asymmetry is related to the concept of bounded rationality which suggests

that there are limitations of knowledge or computational capacity on part of decision-makers which then affect their behavioral choices (Simon, 1991; Aubert *et al*., 1998). In a B2B outsourcing situation, a buyer often does not have complete insight into the seller's operational capacity and capabilities for various reasons such as the organizational structure of the selling firm, i.e., privately-held vs. publicly-traded, which then limits the amount of available information. While factors such as market reputation can provide insights into the post-contract behavior of the seller (Khan *et al*., 2019), it is not possible to anticipate all contingencies given the constantly changing internal and external organizational environment as manifested in the concept of bounded rationality (Williamson, 1975).

2.1.2 Uncertainty

Uncertainty includes lack of ability to predict the changes in various aspects of an exchange or transaction which then forces post-contractual adjustments (Balakrishnan & Wernerfelt, 1986; Walker & Weber 1984). Uncertainty involves environmental changes in demand-supply (Li *et al*., 2024; Mathews *et al*., 2022), technology, and behavior. (Geyskens, *et al*., 2006). *This paper focuses on technological uncertainty only* given that behavioral uncertainty as well as changes in demand and supply are typically linked with post-contractual or ex-post buyer-supplier relations (Jap and Anderson, 2001, Rindfleisch and Heidi, 1997). *Technological uncertainty* is a result of the changes in technical specifications, increased product complexity, and the risks of technological obsolescence (Quinn and Hilmer, 1994), conditions that may impact the decision to outsource.

Within TCA literature, uncertainty is also cited as a condition that fosters opportunism (Williamson, 1975). Although uncertainty has been examined by outsourcing or make or buy researchers such as Balakrishnan and Wernerfelt (1986), Celly *et al*. (1999), Wang (2002), and Rynarzewska *et al*. (2023), it remains abundantly unclear how buyers' pre-contract perceptions of technological uncertainty associated with particular product category or a vendor and its offerings, impact their decision to select and then manage a supplier. From a supplier standpoint, specifically established as well as start-up technology vendors, it is vital to understand whether and how do ex-ante technological uncertainty perceptions on the part of buyers affect their odds of winning a contract. Such understanding can help vendors/suppliers modify their customer targeting and acquisition strategies.

2.1.3 Willingness to Engage in Contractual Relationship

Most buyer-seller relationships involve a contractual arrangement that formally specifies the future roles, duties, responsibilities, and penalties for non-conformance (Cannon and Perreault, 1999; Macneil, 1978; Pathak, 2023). While in the past two decades, much emphasis has been placed on developing mutually beneficial relational exchanges (Barringer, 1997; Cannon and Homburg, 2001; Dwyer *et al*., 1987; Ono and Kubo, 2009) contractual bonds remain the primary focus of many buyer-seller arrangements including outsourced services (Poppo and Zenger, 2002; Richmond *et al*., 1992). Contractual governance, also labeled as legal bonds by Cannon and Perreault (1999), typically provides the buyer with the opportunity to reduce post-contract perceived risks in an outsourcing arrangement by listing specific performance requirements as well as remedies for breach of various clauses.

The importance of formal contracts has also been emphasized by agency theory scholars such as Eisenhardt (1989) in that a tightly structured contract is likely to not only suppress self-serving behavioral tendencies or opportunism on the part of the agent (or seller) while also reducing the need for costly monitoring. Specifically, in order to avoid post-contract performance deviances on the part of the agent (or seller or channel partner), scholars such as Celly and Frazier (1994) suggest the implementation of outcome-based or performance-contingent contracts that compensate the seller/supplier only when certain pre-defined metrics are satisfactorily accomplished. At the same time, other scholars such as Jaworski and McInnis (1989) argue that under conditions of environmental uncertainty, the use of outcome-based contracts can be detrimental to the buyer-seller relationship in that such contracts may erroneously hold the supplier responsible for factors that are beyond his/her control.

Given the presence of ex-ante opportunism and technological uncertainty in an inter-firm transaction, it is therefore important for the suppliers to understand how such perceptions affect the buyers' decision to engage in a contractual relationship. Such an understanding can help suppliers modify their pre-contract marketing and customer acquisition strategies.

2.1.4 Willingness to Engage in Relational Exchange

While contractual relationships are an essential part of almost all inter-firm transactions, they are said to be more specific (Cannon and Perreault, 1999) and viewed as arm's length transactions by scholars such as Barringer (1997) and Dwyer *et al*. (1987). Not only is it important to know whether the pre-contract opportunism and technological uncertainty perceptions of buyer's influence their decision to engage a supplier, it is equally important to know the dynamics of the post-contract buyer-supplier relationship. Compared to contractual relationships that may often span over shorter time periods, relational exchanges involve an extended time horizon and are designed to mutually benefit both parties (Heide, 1994; Macneil 1980). Extant literature on buyer-seller relationship identifies a relational exchange as having the following attributes: long-term orientation, mutual dependence, mutual trust, and open communications (Dwyer *et al*., 1987; Ganesan 1994). Heide (1994) further classifies relational exchange as an arrangement in which the parties involved share common norms.

In addition to the above listed attributes of relational exchanges, these relationships are also often likely to involve bilateral investments on the part of the buyer and the seller or channel partner (Rokkan *et al*., 1994). Such investments usually exhibit the level of trust each exchange partner has in the other. It is to be noted, however, that while unilateral asset investment entailed in transaction cost literature is viewed as a condition that creates safeguarding problem (Rindfleisch and Heide, 1997), bilateral investments are reflective of mutual trust more so than serving as an opportunism deterrent.

While a range of scholars have covered relational exchange or relational contracting (Brown *et al*., 2000; Fink *et al*., 2006; Heide, 1994, Weitz and Jap, 1995), most have focused on relational governance within the context of

channel relationship management. There exists a gap in relational exchange research with regard to how buyers' ex-ante perceptions of opportunism and technological uncertainty affect their relationship choices with the supplier. An awareness and understanding of the relationship between opportunism and technological uncertainty and the willingness of the buyer to engage in a relational exchange can help suppliers develop and alter their positioning strategies during the pre-contract stage.

3. HYPOTHESES DEVELOPMENT

This section examines the relationship connectors between the independent variables (opportunism and technological uncertainty) and the dependent variables (willingness to engage in a contractual relationship and relational exchange). From a seller's perspective such linkages can help them better understand buyer behavior while also offering ways to manage pre-contract perceptions of the buyer.

3.1 Ex-ante Opportunism Perceptions and Willingness-to-Engage in Contractual Relationship

Since *opportunism* is defined as self-interest seeking with guile (Williamson, 1975), both transaction cost and agency scholars suggest various contractual arrangements (Carson *et al*., 2006; McNally and Griffin, 2004; Stump and Heide, 1996) designed to limit the incidence of post-contractual opportunism on the part of the supplier. At the same time, extant literature does not offer any guidance on whether ex-ante or pre-contract opportunism perceptions on the part of the organizational buyers *actually* keeps them from seeking legal bonds with the suppliers. A key factor that renders it difficult to assess opportunism is the degree of information asymmetry that may exist between the buyer and the supplier (Wathne and Heide, 2000). Based on extant literature, to cope with the information asymmetry problem, a buyer typically has two options: increase the degree of monitoring which may require the buyer to incur additional costs, or to seek outcome-based contracts (Eisenhardt, 1989). Monitoring of vendor behavior can be cost prohibitive (Stump and Heide, 1996) as a buyer may have to invest significant resources in developing and deploying a monitoring mechanism. Monitoring is also less likely to be an option for relationships with shorter duration.

The use of contractual arrangements to guard against post-contract opportunism is prevalent in TCA, outsourcing, and channel relationship literature (Celly and Frazier, 1994; Platz and Temponi, 2007; Wathne and Heide, 2000). For instance, Richmond *et al*., (1992), contend that in a comprehensive contract, the roles and expectations of each party are explicitly stated thereby reducing the potential of opportunism-related payoffs. Similarly, Platz and Temponi (2007) suggest that a well-structured contract can reduce the incidence of conflict of interest between the buyer and the seller. Existing research, however, does not provide guidance on whether the buyer will *actually* exclude a supplier from contractual consideration when perceiving higher degree of opportunism in the ex-ante stage. Williamson (1975) argues that all contracts are incomplete due to the presence of bounded rationality whereby there exist constraints on the decision-makers' ability to anticipate all relevant contingencies surrounding an exchange. Given the "incomplete" nature of contracts, therefore, it is likely that when anticipating higher degree of post-contract opportunism, a buyer will likely exclude a supplier from consideration in the ex-ante stage, thereby leading to the following hypothesis:

H1*: There is a negative relationship between buyers' ex-ante perceptions of opportunism and their willingness to engage in a contractual relationship with the supplier.*

3.2 Ex-ante Technological Uncertainty Perceptions and Willingness-to-Engage in Contractual Relationship

From an *uncertainty* perspective, a range of TCA and relational exchange scholars including Williamson (1975) and Barringer (1997) agree that uncertainty, behavioral and environmental, renders most buyer-seller contracts as incomplete. This then forces parties in an exchange to either seek amendments in existing contracts (Geyskens, *et al*., 2006) or disband their relationship altogether. Richmond *et al*. (1992) argue that most information system outsourcing contracts are incomplete due to changing technological and organizational (both buyer and supplier) environments. Moreover, mergers and acquisitions on the outsourcing organization and or its suppliers are further likely to render existing contracts as incomplete or unenforceable.

McNally and Griffin (2004) suggest that when facing environmental and behavioral uncertainty, a buying firm is likely to opt for joint action with the supplier as opposed to seeking arm's length relationships. Similarly, if the parties to an exchange perceive lower level of uncertainty and perhaps greater control over various aspects of the transaction, they are less likely to engage in a relational exchange and more likely to seek contractual arrangements (Pfeffer and Salancik, 1978; Williamson, 1985). Fink *et al*. (2006) further contend that when anticipating environmental and or technological uncertainty in a transaction, buyers and suppliers tend to seek a relational exchange in order to reduce the overall risk, thereby leading to the following hypothesis:

H2*: There is a negative relationship between buyers' ex-ante perceptions of technological uncertainty and their willingness to engage in a contractual relationship with the supplier.*

3.3 Ex-ante Opportunism Perceptions and Willingness-to-Engage in Relational Exchange

From a supplier's standpoint, it is important to know the relationship between buyers' ex-ante perceptions of opportunism and how that may affect their willingness to structure a post-contract relationship with the supplier. Such an understanding can help suppliers devise and implement appropriate post-contract client management strategies. Extant literature shows that when perceiving higher degree of *opportunism*, parties to an exchange are less likely to trust each other (Jap and Anderson, 2001) and hence are unlikely to engage in open communications and confidential information sharing which is a key trait of a relational exchange (Cannon and Perreault, 1997; Cannon and Homburg, 2001). Greater information sharing is generally employed with the objective to reduce information asymmetry that exists between the buyer and the seller and provides a buyer with insights into a supplier's future plans

(Cannon and Homburg, 2001). And while confidential information sharing or open communications with the buyer also enable a supplier to better anticipate the environmental uncertainties in the buyer's business; such level of collaboration is unlikely in the presence of opportunism (John, 1984) given that it may create a safeguarding problem for the buyer (Heide and John, 1990).

Moreover, higher degree of opportunism also affects the willingness of the parties to engage in an extended relationship with each other (Ono and Kubo, 2009). Long-term or extended relationships closely resemble the attributes of a relational exchange and often also involve relationship-specific investments by the exchange partners (Rokkan *et al*., 2003). When anticipating a higher degree of opportunism, however, parties to an exchange are less likely to make relationship-specific investments as such assets often create a lock-in condition (Godfrey and Hill, 1995; Lonsdale, 2001) thereby leading to the following hypothesis:

H3*: There is a negative relationship between buyers' ex-ante perceptions of opportunism and their willingness to engage in a relational exchange with the supplier.*

3.4 Ex-ante Technological Uncertainty Perceptions and Willingness-to-Engage in Relational Exchange

Uncertainty is a condition that renders all contracts incomplete (Richmond *et al*., 1992) and creates adaptation problems for the parties in an exchange (Poppo and Zenger, 2002; Williamson, 1975). Specifically with regard to technology that faces rapid changes in specifications and a higher risk of obsolescence, it is less likely that a buyer and a supplier will anticipate and include all relevant contingencies in a formal contract (Richmond *et al*., 1992). Stated otherwise, the notion of comprehensive contracts is rather rare in IT outsourcing arrangements due to the inherent uncertainty in technology. Furthermore, such inherent uncertainty is also likely to have a negative impact on the overall success of an IT outsourcing initiative (Wang, 2002). The incomplete contracting phenomenon in IT outsourcing therefore renders it important for buyers and suppliers to collaborate to accomplish transaction objectives.

In their study of the relationship between IT managers and their outsourced vendors, Poppo and Zenger (2002) found that technological uncertainty combined with asset specificity led IT managers to seek closer relationships with their suppliers. Similarly, Noordewier *et al*. (1990) also found the presence of a relationship between environmental uncertainty and relational exchange in their research on performance outcomes in buyer-seller exchanges. Still others (Crocker and Masten, 1991; Macneil, 1978; Williamson, 1991) found that inter-firm arrangements are more likely to follow a relational exchange when facing a higher degree of environmental and technological uncertainty. This is a function of the higher costs of adaptations that may need to be made to traditional contracts because of the changes in the surrounding inter-firm relationships, thereby leading to the following hypothesis:

H4*: There is a positive relationship between buyers' ex-ante perceptions of technological uncertainty and their willingness to a relational exchange with the supplier.*

3.5 Technological Uncertainty Perceptions and Opportunism

The linkages between environmental uncertainty (including technological uncertainty) and opportunism are well established across extant TCA literature (e.g., McNally & Griffin, 2004; Mysen *et al*., 2010). Rindfleisch and Heide (1997), for instance, contend that environmental uncertainty creates adaptation problems in that it may require the parties in an exchange to modify existing contracts in order to fit the changing circumstances (Williamson, 1985). As such, these linkages were not explored in this paper.

3.6 Control Variables

Based on extant literature on transaction cost and relational exchange (Cannon and Perreault, 1999; Geyskens *et al*., 2006; Larson *et al*., 1997; Nooteboom, 1992), the following control variables analyzed in this study include size of the buying organization, idiosyncratic or relationship-specific investments, and information sharing/exchange between the buyer and the supplier or vendor.

Buyer size—scholars have generally measured in terms of the number of employees or the annual revenues (Krause & Ellram, 1997; Larson *et al*., 2005). Nooteboom (1992) states that both buyer and supplier firm size influence the perceptions of dependency in an exchange. Smaller or larger buyer size is also cited as a determinant of higher or lower power-dependency on the part of the buyer (Anderson and Narus, 1990). Larson *et al*. (2005) contend that larger buyers are more inclined to develop long-term relational exchange with larger suppliers due to the reason that smaller vendors are viewed as having short-term orientation.

Idiosyncratic/Relationship-specific Investments—also termed asset specificity in TCA literature (Geyskens *et al*., 2006, Williamson, 1985) and are considered as assets that are employed for a particular exchange and have little if any residual value outside that exchange. From a buyer's perspective, the willingness of the supplier to invest in relationship-specific investments can also indicate to the buyer that a supplier can be trusted (Ganesan, 1994) thereby reducing buyer's perceptions of supplier opportunism. Although Heide (1994) contends otherwise that relationship-specific investments lead to dependence and hence increase the risk of opportunistic behavior on the part of exchange members.

Information Sharing/Exchange—information sharing or exchange is defined by Cannon and Perreault (1999, pp. 441) as "expectations of open sharing of information" on the part of both the buyer and the seller. Open channels of communication as well as effective exchange of information from the supplier/vendor provide buyers with insights into a supplier's future plans (Cannon and Homburg, 2001) thereby enabling them to adjust their internal operational needs and processes while likely alleviating bounded rationality concerns. Information asymmetry, whereby one party in an exchange has more information than the other, is cited as a condition that fosters opportunistic behavior in a principal-agent relationship (Eisenhardt, 1989; Wathne and Heide, 2000). Figure 1 provides an overview of the research model and the hypotheses.

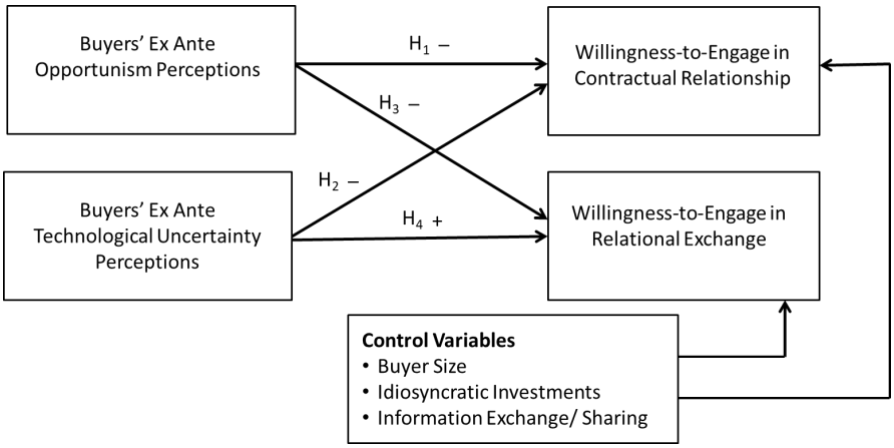

Figure 1 Research model

4. METHODOLOGY

This research utilizes an online panel of IT buyers representing their organizations. As discussed by Vieira and Skinner (2006), panel-based samples do not lead to significantly different results compared to the studies that utilize other sample selection mechanisms. The use of IT procurement professionals with purchase decision-making authority (i.e., having the ability to select suppliers and execute contracts on behalf of their organization) as proxies for organizations also aligns with other research that studied outsourcing as well as other B2B phenomenon such as transaction cost analysis (Pathak, 2023; Wang, 2002; Whitten and Leidner, 2006).

4.1 Sample Selection and Data Collection

Altogether, 1,478 IT procurement professionals with purchasing authority (i.e., having the ability to select and enter into contracts with suppliers on behalf of their organization) were invited to participate in the survey. At the onset of the survey, an initial 66 respondents took the survey and the survey link was disabled temporarily to review for validity and accuracy of preliminary responses. The survey was then re-launched and an additional 154 respondents completed the survey, bringing the total to 220. In order to increase the sample size, a third stage of the survey was launched a week later that included reminders to respondents that had not taken the survey. This effort yielded 81 more surveys bringing the total number of completed surveys to 301. Using the recommendations of Armstrong and Overton (1977), the results for each stage were then compared to ensure consistency. The results of the consistency check did not reveal any major differences between the means, standard deviations, and reliability scores for each of the three stages of the survey.

The 301 completed surveys provided a response rate of 20.4 percent. The collected survey data was then analyzed to identify missing data or inaccurate/invalid responses as well as any outliers. The data screening process then led to the elimination of 98 respondents that had either entered invalid/inaccurate responses or had missing data. The elimination of 98 respondents was based on their inability to satisfy additional criteria such as size of the respondents' organization, depth of their experience with IT procurement, etc. The 203 valid surveys provided a usable response rate of 13.7 percent.

The sample respondent profile is detailed in Table 1. A vast majority, 72.4 percent, of the 203 respondents stated that they had the final say over their organizations IT outsourcing while the remainder, 27.6 percent classified their role as that of a recommender or influencer in their organization's decision to select and enter into relationships with sellers/suppliers. The respondents reflected a cross-section of industries including manufacturing (24.6 percent), construction (7.9 percent), professional services (7.9 percent), retailing (6.9 percent), telecommunications (4.4 percent), and education (4.4 percent). The rest of the respondents (43.9 percent) were affiliated with a multitude of industries, with each having less than four percent of the total sample share. Table 1 provides a summary of respondents' characteristics.

Table 1 Survey respondent profile

Male	66%
Female	34%
Number of Years Employed with their Current Organization (median)	7
Number of Years in IT Procurement (median)	10
Respondents' Annual IT Procurement Responsibility (median)	$400,000
Number of Employees in the Firm (median)	530
Annual Revenues of the Firm (median)	$34 million
Annual IT Budget of the Firm (median)	$750,000
Percent of Total IT Budget Dedicated to Outsourcing (median)	25%

4.2 Measures

With regard to organizational buyers' opportunism perceptions, the 7-point Likert scale used by Rokkan *et al.* (2003) was adapted to fit the ex-ante or vendor evaluation context. Technological uncertainty items were adapted from the 7-point scale used by Stump and Heide (1996). With regard to willingness to engage in contractual relationship, items measured on a 7-point Likert-scale format, were

adapted from Carey *et al*. (2011). Buyers' willingness-to-engage in a relational exchange construct adapted items from Joshi and Stump (1999) and from Poppo and Zenger (2002). All items were based on 7-point Likert-type scales.

In addition, the research model also included three control variables that focused on buyers' firm size, willingness of the vendor to make relationship-specific or idiosyncratic investments, as well as open sharing of information by the vendor. With the exception of buyer size which was measured by the number of employees as suggested by Larson *et al*. (2005), the other two variables were adapted from established scales for idiosyncratic investments (Anderson and Weitz, 1992) and information sharing (Doney and Cannon, 1997; Cannon and Homburg, 2001). Table 2 provides a summary of the scale tests.

Table 2 Scale reliability & validity results

Construct	Reliability (α)	Mean	Std. Deviation	Average Variance Extracted (AVE)
Perceived Opportunism (6 items)	0.971	3.617	1.974	0.849
Perceived Technological Uncertainty (4 items)	0.910	3.858	1.386	0.720
Willingness-to-Engage in Contractual Relationship (3 items)	0.865	5.567	1.130	0.685
Willingness to Engage in Relational Exchange (3 items)	0.768	5. 300	1.119	0.545
Idiosyncratic Investments by Vendor – control (3 items)	0.895	4.827	1.356	0.747
Information Sharing by Vendor – control (3 items)	0.915	4.277	1.724	0.788

Note: Buyer size, the third control variable, is excluded from the table given that it was measured using a single item variable (number of employees).

Table 3 Summary results

Predictor Variable		Outcome Variable	Unstandardized Coefficient of Regression	Significance (p-value)
Perceived Opportunism (H1)	→	Willingness-to-Engage in Contracts	-0.038	p>0.05
Perceived Technological Uncertainty (H2)	→	Willingness-to-Engage in Contracts	-0.058	p>0.05
Perceived Opportunism (H3)	→	Willingness-to-Engage in Relational Exchange	-0.063	p<0.10
Perceived Technological Uncertainty (H4)	→	Willingness-to-Engage in Relational Exchange	-0.037	p>0.05

4.3 Research Technique/Data Analysis

Structural equation modeling (SEM) is employed to determine the nature and extent of the relationship between IT buyers' perceptions of vendor opportunism and technological uncertainty and their relationship choices with the vendors. Specifically, SPSS and AMOS were used to run the data analysis.

Common method variance issues were assessed. According to Podsakoff *et al*. (2003) CMV reflects the amount of variance that stems from the use of a specific measurement method as opposed to the constructs that are represented by the various items or measures. In assessing for CMV, this paper used the procedures suggested by Podsakoff and Organ (1986) and included use of different anchors for many of the questions as well as conducting a one-factor test. The results of the one-factor test indicated the presence of multiple factors whereby none of the factors accounted for majority of the variance. Moreover, three marker variables were also used within the data analysis (Williams *et al*., 2010).

5. RESULTS

Overall fit indicators suggest adequate model fit (Chi-Square = 1010.123; DOF = 504; CMIN/DF = 2.004; CFI = 0.912; TLI = 0.902; RMSEA = 0.071). Control variables were examined for significant linkages. Specifically, idiosyncratic investment by vendor were found to have a significant impact on buyers' willingness-to-engage in contracts (p. <.01) and relational governance (p. <.01). Similarly, information sharing by the supplier significantly impacted buyers' perceptions of supplier opportunism (p. <.01), technological uncertainty (p. <.05), and their willingness-to-engage in legal contracts/bonds (p. <.05). Next, hypothesized linkages are examined. Results for H1 do not provide support for the linkages (beta of -0.038 and a p. >.05). Results for H2 are not significant (beta of -0.058 and a p. >.05). The findings fail to support H2. H3 produced a marginally significant relationship (p. <.1) with a beta of -0.063. Results indicate marginal support for H3. H4 examined if a positive relationship between buyers' perceptions of technological uncertainty and their willingness-to-engage in a relational exchange with the supplier exists, however, results do not provide support for this linkage (p. >.05). Table 3 provides a summary of the hypotheses testing results.

6. DISCUSSION & MANAGERIAL IMPLICATIONS

6.1 Perceived Opportunism & Contractual Relationship

Despite extant literature across the TCA and Agency Theory research stream, the study fails to support a positive linkage between buyers' perceptions of supplier opportunism and their willingness-to-engage in a contractual relationship, as outlined in H1. This finding carries several meaningful implications for researchers and practitioners. Previous scholarly research on agency theory, transaction cost analysis, and channel management research streams (Eisenhardt, 1989 Celly and Frazier, 1996; Wathne and Heide, 2000; Platz and Temponi, 2007) suggests that in order to curb post-contractual vendor opportunism, buyers need to engage in stringent contractual relationships, including outcome-based contracts, to safeguard their interests. This is the first study that actually tested the impact of perceived ex-ante opportunism on the part of buyers and how that impacts a core seller/supplier outcome, i.e., ability to acquire a contractual relationship.

The findings of this paper essentially offer an alternative perspective to the existing research on agency

theory, transaction cost, and channel management by showing that higher anticipated supplier opportunism in the ex-ante stage, does not prompt buyers to exclude suppliers from contractual consideration. Nor do the results indicate that when perceiving a higher degree of seller/supplier opportunism in the ex-ante stage, buyers would focus on seeking more stringent legal contracts than what they normally seek in the general course of procurement activities with external sellers/suppliers. In essence, the findings of this paper suggest that perhaps buyers may be swayed by other factors, such as uniqueness of a seller/supplier's product or service, extensive warranties, prospects of greater cost-savings, extraneous marketplace conditions, e.g., supply constraints, that may render it difficult for the buyers to eliminate a seller/supplier from consideration despite the ex-ante opportunism perceptions of the buyer.

6.2 Perceived Technological Uncertainty & Contractual Relationship

With regard to H2, the negative relationship between perceived technological uncertainty and buyers' willingness-to-engage in a contractual relationship with the seller/supplier, the results of the study fail to support such a linkage. Given the focus of this study on outsourced IT solutions, it is likely that buyers perhaps anticipate a certain degree of technical change in such solutions, irrespective of the provider of such solutions. For instance, hospitals that purchase various applications such as electronic medical records expect that their vendors will perform certain application upgrades over time, in order to keep those applications current and/or compatible with other software. Those upgrades may create short-term performance issues, for instance, application availability or changes in application interface, etc., which are not considered a sufficient reason not to select a seller/supplier.

In essence, within IT outsourcing, technological uncertainty is not only anticipated but may even be considered as a norm thereby explaining the lack of support for the negative linkage between buyers' ex-ante technological uncertainty perceptions and their willingness-to-engage in contracts with sellers/supplier. Overall, existing transaction cost research shows that buyers are less likely to seek contractual relationships when anticipating a higher degree of technological uncertainty (Salancik and Pfeffer, 1978; Williamson, 1985; Fink *et al*., 2006). However, the results of this study reveal a lack of support for this perspective, at least within the IT outsourcing context. This finding is critical for small to mid-sized technology vendors as well as start-up IT organizations in that the buyers' are not averse to awarding contracts when facing technological uncertainty associated with a vendor's offering. The vendor, however, may need to offset such technological uncertainty perceptions with other compelling value propositions such as overall cost-savings or superior customer service.

6.3 Perceived Opportunism & Relational Governance

While the study finds only marginal support for H3, the negative linkage between perceived opportunism and buyers' willingness-to-engage in a relational governance with the seller/supplier, these findings align with previous relational exchange and transaction cost research. Previous research (Godfrey and Hill, 1995; Lonsdale, 2001; Ono and Kubo, 2009) shows that opportunism in an inter-firm relationship is unlikely to foster information sharing and relationship-specific investments by the parties to a transaction. From a managerial perspective, vendors that suffer from higher perceived opportunism are unlikely to be viewed as business partners by the buying organization thereby limiting them to only short-term, arm's length, discrete, and perhaps less lucrative IT outsourcing transactions.

6.4 Perceived Technological Uncertainty & Relational Exchange

With regard to H4, the positive linkage between perceived technological uncertainty and the willingness-to-engage in relational governance on the part of the buyer, the results do not find support for this hypothesis. One explanation could be that buyer-seller relational exchanges may be more appropriate when procuring customized as opposed to standardized solutions. For instance, within the IT outsourcing context, many solutions such as data storage or application hosting are deemed rather standardized which essentially renders fear of technological obsolescence as less of an issue for the individual buyer. This in turn reduces the need on the part of the buyer to seek a closer relationship with its vendor(s), specifically if the solution at hand is an "off-the-shelf" offering.

Also, many IT outsourcing projects involve a certain degree of buyer-seller collaboration in general without having technological uncertainty as a precursor to such an exchange. For instance, the implementation cycle for various hospital IT systems can span several months and often require close-working relationships among internal hospital IT staff as well as vendor's personnel. Lastly, the type of solution outsourced (simple vs. complex; standardized vs. custom) as well as the length of relationship is also likely to influence the degree of relational exchange between the buyers and sellers more so than just the fear of technological uncertainty. In essence, the findings of the study suggest that the mere presence of technological uncertainty in the ex-ante stage is unlikely to be a reason for IT buyers to seek relational governance with their vendor and other factors, such as the ones discussed above, must also be taken into consideration.

7. CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

7.1 Conclusion

This study carries meaningful implications for the academic community as well as practitioners. With regard to existing scholarly research, both TCA as well as agency theory scholars have asserted the need for "tight" contractual agreements to curb ex-post or post-contractual opportunism (Eisenhardt, 1989; Geyskens, *et al*., 2006). In that regard, this study complements and expands existing TCA as well as other research streams including relational exchange. This was the first study that directly examined the impact of buyers' ex-ante perceptions of seller/supplier opportunism and technological uncertainty on their seller/supplier selection choices as well as the post-selectin relationship scope. Moreover, the study also contributes to the supplier evaluation literature by introducing core TCA variables into vendor evaluation and selection criteria.

From a managerial standpoint, an important contribution of this study is that the research findings provide sellers/suppliers with insights into buyers' pre-contract perceptions and how they impact core business outcomes for suppliers, i.e., the likelihood of winning a contract and the post-contract nature of the relationship with the buyer. The lack of support for the linkage between buyers' ex-ante perceptions of opportunism and their willingness-to-engage in a contractual relationship bodes specifically well for smaller suppliers and start-up vendors as they often lack the reputation or the scale of a larger, publicly-traded supplier and as such buyers' may perceive a higher degree of post-contract opportunism on part of such sellers/suppliers. Similarly, the lack of support for the relationship between perceived technological uncertainty and buyers' willingness-to-engage with a vendor helps the cause of sellers/suppliers of innovative/new technology solutions, specifically, information technology providers that often have to compete with established players such as Microsoft, Amazon, Intel, and others.

7.2 Limitations

As with most research, the current study has limitations that should be highlighted. These limitations include lack of focus on a specific outsourced IT solution, as well as a particular sector or industry. Some variation in results can be expected when applying this research model within the context of a particular IT or another outsourced solution. Similarly, while the respondent base in this survey is comprised of senior IT procurement professionals across multiple industries, it is likely that the results of the study may vary across individual industries. Lastly, given that IT outsourcing is rather global in nature in that it often involves global providers and global buyers, this study does not make a distinction between domestic vs. off-shore IT outsourcing.

7.3 Future Research

One area of future research revolves around using some of the control variables such as idiosyncratic investments and information sharing as moderating variables that may influence the relationship between buyer's perceptions of vendor opportunism and technological uncertainty and their inclination to engage in a particular relation type (contractual or relational exchange) with the vendors. Another research avenue could incorporate other TCA and/or relational exchange variables such as behavioral uncertainty, performance ambiguity, and goal congruence within the existing research model. Yet another research option could apply the existing research model to either specific industry settings or a particular IT solution. Given that IT outsourcing is a global phenomenon, it is important to study buyers' perceptions of not just domestic vendors but also off-shore IT solution providers. This creates another potential area for future research.

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