THE ROLE OF STRUCTURAL AND RELATIONAL GOVERNANCE IN DEVELOPING A SUCCESSFUL EXCHANGE RELATIONSHIP BETWEEN BUYER AND SUPPLIER: A CASE STUDY OF THE CONSTRUCTION INDUSTRY IN NEPAL

Ashish Dewan

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ABSTRACT

Title of Dissertation	THE ROLE OF STRUCTURAL AND RELATIONAL GOVERNANCE IN DEVELOPING A SUCCESSFUL EXCHANGE RELATIONSHIP BETWEEN BUYER AND SUPPLIER: A CASE STUDY OF THE CONSTRUCTION INDUSTRY IN NEPAL
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Integrating Resource Dependency Theory (RDT), Transaction Cost Economy (TCE), and Social Embeddedness Theory (SET) perspectives, this paper conceptualizes the construction companies and material suppliers alliance model from inception to performance, by conceptualizing the adaptability of structural and relational governance and role on implementing successful exchange dyad between two firms and explores the relationship between perceived dependency, structural and relational governance, resources exchange, and buyer's satisfaction.

The objectives of the study include: 1) to develop a model explaining the role of structural and relational governance in generating trust, and the antecedent factors such as perceived dependency that result in a successful buyer-supplier exchange dyad in the construction industry in Nepal, and 2) to test a model that integrates three different perspectives: the resource dependency perspective (RDT), the transaction cost economy (TCE), and the social embeddedness theory (SET), to show the formation of the successful exchange relationship of the construction companies and the material suppliers and the role of structural and relational governance in generating trust between construction companies and a material suppliers. Using survey data gathered from 175 alliance construction companies and material suppliers in Nepal, the statistical result revealed that the proposed model has significant mediating effects contributing to successful exchange performance. Based on the causal path model, structural and relational governance are the key enablers of exchange performance. These findings, however, reveal that perceived dependency is only an antecedent factor and has only an indirect effect on the exchange of information. It appears plausible that mere

dependency between parties may not lead to an exchange of information, which requires constant interaction between parties, which would lead to ease of communication and trust between parties. These empirical observations question whether the hybrid form of governance like an exchange relationship can achieve extensive information exchange if the dyad exchange was driven by merely price and contractual governance. Instead, it suggests that exchange relationships are socially embedded and that all the economic exchanges are embedded in the structure of social relationships, where parties in a contract extensively interact, and that the relationship is self-governed, where the possibility of hold-up by one of the parties is drastically minimized.

The result overall indicated that to have a successful exchange relationship there must exist the interplay of both structural and relational governance. Furthermore, mere contractual relationships driven by price can jeopardize the alliance. This can also increase the transaction cost arising out of hold-up and opportunistic behavior by the parties in the relationship. Hence, this implies that in Nepal almost all economic transactions are characterized by social relations and that the success of the conceptual model opens new avenues for other kinds of alliances such as public-private projects, which have been deemed significant in developing various government projects.

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

In today's dynamic world where changes in organizations' behavior and their governance structure have become omnipresent, firms and organizations in search of key resources for survival, and those that want to stay ahead of the competition, enter into an inter-organizational relationship (IOR). This notion is supported by the resource dependency perspective (RDT). This perspective postulates that firms can take several actions to have access to resources, and one of them is by allying with another firm. The failure of the market due to small numbers of bargaining has led organizations to enter inter-organizational relationships (IOR), as an alliance provides firms and organizations with a gamut of opportunities. These opportunities are knowledge sharing, alleviation of risk of hold-up, minimization financial risk, and most important minimization of transaction costs arising out of malfeasant behavior and hold ups. Therefore, this study explains the formation of IORs from three different perspectives: resource dependency theory (RDT), transaction cost economy (TCE), and social embeddedness theory (SET). The conceptual framework is developed to show that the impact of various determinants on exchange relationship performance is developed from the lens of the dynamic evolution of alliance. The industry selected for analysis is the construction industry, as the firms in this industry operate under networks, where there exist exchange dyads between contractors and material suppliers.

Both endogenous and exogenous factors are equally responsible for the failure and success of the organization. Endogenous factors are inclusive of internal management, internal resources, and governance structure, whereas exogenous factors generally include the market, economy, and competitors as decisive factors. The general notion that no organization can survive independently or are self-sufficient in

terms of resources has been widely regarded by scholars. Organizations, to stay competitive, must either an enter alliance or initiate an inter-firm relationship with another organization. The success or failure of the inter alliance and the relationship between two firms are also inclusive of both endogenous and exogenous factors. Past studies on the inter-organizational relationship (IOR) have widely covered the choice of governance structure in formalizing the inter-organizational relationship and the impact of the choice of governance in the inter-firm relationship. Studies in the past have also shown the significance of governance which is conducive to the success of both inter-firm alliances and relationships. This study, therefore, focuses on the interplay of two types of governance – structural and relational – to generate trust between parties in the relationship that would likely lead to a prolonged relationship. Contractors operating in Nepal seemed a viable option for a unit of analysis and to test the hypothesis. It is argued that rather than an arm-length relationship with the supplier, the prolonged relationship resulting from several transactions is conducive to generating trust and further leads to subsequent relationships with the same supplier.

The Nepalese construction industry contributes approximately 11% to the GDP. The industry mobilizes around 35% of the total government budget and 60% of the nation's development budget. A major portion of the national budget is allocated for infrastructure development, especially in rural areas, to render transportation and communication facilities, and to sustain quality infrastructure in existing roads and highways that connect rural to urban cities. As a result, this sector is creating employment for about one million people after the agricultural sector in Nepal. In response to the post-devastating 2015 earthquake, the Nepal government, in coordination with the US and Japanese aid, has taken the initiative to resurrect all the monuments, houses, and buildings that were destroyed by the earthquake. Hence, in the last two decades, there has been considerable progress in the construction industry. The sale of construction equipment and construction-related materials has doubled. During this period, Nepalese contractors have seen considerable development in their management skills, working capacity, financial and technical capabilities, and the acquisition of suitable construction equipment.

The network of the Nepalese construction industry constitutes stakeholders from various sectors. These stakeholders are regulating bodies (government and local

government), employers (public and private sectors), trade unions, professional facilitators (consulting engineers), chambers of industries/commerce, training providers, and insurance providers. The contractors bid for the projects initiated by both the public and private sectors, and the lowest bidder obtains the project. Other significant stakeholders that partake in the network are subcontractors (informal), labor contractors (informal), and material suppliers (both formal and informal). This study narrows its focus to the inter-firm relationship between contractors (buyers) and material suppliers.

In response to the challenges faced by the construction industries, this research combines the Resource Dependence Theory (RDT), the Transaction Cost Economy (TCE), and the Social Embedded Theory (SET) to show the formation of the successful buyer-supplier relationship and unravel the interplay of structural governance and relational governance that exists between contractors (buyers) and suppliers to generate trust. Therefore, this study measures the performance of the buyer-seller relationship from the perspective of the buyer, which is viable because, in the construction industry, it is the buyer who evaluates the quality of the product and organizational structures. It is also possible that a firm may cease its relationship with partners that have manifested a propensity for opportunistic behavior and retain those that have abstained from such behavior (Gulati & Nickerson, 2008). Consistent with research by Cabigiosu and Camuffo (2012), this study adopts the purchaser's perception of supplier performance. Hence, this study tends to answer two important research questions. First, what are the determinants of antecedent conditions to form the exchange dyad or buyer-supplier relational exchange, and second, what is the role of structural and relational governance that results in a successful buyer-supplier relationship?

1.2 Significance of the Study

In the past decades, there have been a significant number of studies in the literature on the inter-firm inter-organizational network relationship covering strategic alliance governance, exchange relationship governance, and joint venture. Two governance mechanisms, structural and relational, have the caught attention of a considerable number of scholars. It has been argued that structural and relational

governance can be either complementary or substitutional (Faems et al., 2008; Ferguson, Paulin, & Bergeron, 2005; Garbade, Omta, & Fortuin, 2016; Hoetker & Mellewigt, 2009; Lee & Cavusgil, 2006; Mellewigt, Madhok, & Weibel, 2007; Oxley, 1997; Poppo & Zenger, 2002). Other scholars in the alliance governance literature have also argued that two different governance mechanisms can be both complementary and substitute (Abdi & Aulakh, 2017). Given the ambiguity of the results in the literature on the two governing mechanisms and the paucity of evidence in the choice of governance in the exchange relationship, there is a lot more to explore.

It is evident from past studies, that firms and organizations enter inter-organizational network relationships, such as joint ventures, license agreements, supplier-buyer exchange relationships, and strategic alliances to stay ahead of competitors. By entering into inter-organizational network relationships, firms can benefit from three prominent resources, namely financial resources, institutional resources, and knowledge and information resources (Gulati, Dialdin, & Wang, 2002). However, collaborations often fail to achieve their objectives and eventually cease to exist (Lakpetch & Lorsuwannarat, 2012). Therefore, to keep the alliance intact and to continue a relationship with existing partners, firms adopt various types of governance structures such as equity and non-equity joint ventures, or by applying different types of governance mechanisms such as structural and relational governance. There has been an abundance of studies conducted on governance regarding the inter-organizational network relationship, primarily focusing on the strategic alliance (Faems et al., 2008; Gulati, 1995a; Lioukas & Reuer, 2020; Madhok, 1995; Reuer & Ariño, 2007). Additionally, international scholars have extended their interest in the exchange relationship between the buyer and supplier in the IOR literature. The influence of preexisting trust in the choice of governance mode such as make, ally, or buy in the buyer and supplier relationship and eventually such trust plays a substitution role in overall exchange performance (Gulati & Nickerson, 2008). The positive impact of trust at both levels (interpersonal and organizational) in managing conflict, cost negotiation, and enhancing performance in the inter-firm dyad (Zaheer, McEvily, & Perrone, 1998). The perception toward the supplier by the focal buyer or the buyer's satisfaction with a supplier is largely affected by a social comparison process involving suppliers' practices across other buyers in the same network (Sa Vinhas, Heide, & Jap, 2012). The

importance of drafting formal contracts to delineate the roles and obligations of both parties (buyers and suppliers) involves and clarifies payment methods, and delivery in advance, even though the contract is unlikely to be enforced (Duan, 2012). Although there have been considerable studies on the exchange relationship in inter-firm dyads, few studies have covered the role of structural and relational governance in creating trust between exchange parties. Indeed, structural and relational governance complement rather than substitute each other in the inter-firm dyad between contractors (buyers) and the notion of material suppliers is yet to be properly exposed.

While there have been growing studies in the construction industry covering various challenges and problems faced by Nepalese contractors, the low bidding system, delays in government budgets, and low-quality work, none of the studies so far have uncovered the inter-firm dyad between contractors and material suppliers. In the construction industry, the lowest bidder is the one that gets the contract, as stated earlier. The lowest bidder before bidding must evaluate all of the costs to be incurred in the project to be undertaken before making any bid. Therefore, contractors (buyers) must have a long-term relationship with their supplier that is trustworthy and is more likely to supply quality materials at the best price. Hence it is important to understand how contractors reach that certain phase where they completely trust their suppliers.

The foremost objective of this study is to argue the role of structural governance in creating a domain where trust between firms in the inter-firm relationship can flourish and where a framework can be developed that integrates various categories of relational governance for future investigation. The focus is on the factors determining the successful exchange relationship between buyer and seller. Assuming that both firms in the relationship have a common objective to remain competitive, what are the decisive factors that lead firms to a develop successful exchange relationship? How does the structural governing mechanism facilitate the relational governing mechanism, and how can the various categories of relational governance provide a platform to create trust? This dissertation attempts to uncover the importance of structural governance and the interplay of various characteristics of relational governance in creating trust between the buyer and supplier in the construction industry in Nepal that may lead to a prolonged relationship. This empirical study is based on a sample of 350 interfirm dyads between contractors (buyers) and construction material suppliers. The results

indicate that structural governance and relational governance complement rather than substitute each other.

Thus, the significance of the study hinges on its two-fold contributions. First, the study provides a detailed understanding of how two governing mechanisms can generate trust, making a contribution to the theoretical literature on two significant governance mechanisms. Second, in response to the challenges faced by construction, the study provides insight into how contractors (buyers) and material suppliers manage their long-term relationships. The empirical results from this study provide ways for contractors to manage their relationship with the supplier, and it also provides the general idea that a healthy relationship between contractors and suppliers can also impact the performance of the project.

1.3 Objectives of the Study

The research objectives are as follows:

1) To develop a model explaining the role of structural and relational governance in generating trust, and the antecedent factors such as perceived dependency that result in a successful buyer-supplier relationship in the construction industry in Nepal.

2) To test a model that combines three different perspectives: the resource dependency perspective (RDT), the transaction cost economy (TCE), and the social embedded theory (SET), to show the formation of the successful exchange relationship of buyer and supplier and the role of structural and relational governance in generating trust between buyer and supplier.

1.4 Scope of the Study

The interfirm exchange relationship between contractors (buyers) and material suppliers is the major focal point of the dissertation. This study recognizes the formalized interfirm exchange relationship between contractors and material suppliers where actual transactions take place. The contractor-supplier relationship is defined as the interfirm exchange relationship for the fulfillment of objectives related to

construction. In this definition, the contractor-supplier interfirm relationship is exclusive to the contractual agreement related to the exchange of goods and services in construction activity. The goods exchanged are inclusive of various kinds of unique materials used in construction, sophisticated tools, equipment, and machinery. The services exchanged include knowledge and information relating to goods used in construction.

1.4.1 Scope of Content

This study combines Resource Dependence Theory (RDT), Transaction Cost Economy (TCE), and Social Embedded Theory (SET) to explain how various factors derived from these three theories can explain the formation of the interfirm exchange relationship between the buyer and supplier firm. The study, in addition, also explains the importance of both structural and relational governance in generating trust between two parties in a relationship. The interplay of two governance mechanisms is shown in the conceptual model. The variable, perceived dependency, is derived from the resource dependency perspective (RDT). This perspective postulates that firms in pursuit of resources that are scarce to them seek inter-organizational relationships with other firms. Hence, the variable perceived dependency is defined as the extent to which the buyer firm is dependent on the supplier firm in terms of various resources. Firms also enter into an IOR to reduce anticipated transaction costs associated with the risks arising out of contractual hazards. Hence, transaction cost economy (TCE) assumes that firms, to reduce uncertainty about the future behavior of other partners and simultaneously minimize risks that they are obliged to assume owing to possible opportunistic behavior, form inter-organizational relationships. This theory also assumes that economic actors are rationally bounded and potentially opportunistic. This bounded rationality explains how economic actors tend to enforce an incomplete contract, and as being potentially opportunistic there is a chance that unfavorable exchange conditions can increase the transaction costs, thus resulting in contractual hazards. The variable, structural agreement, is derived from TCE. The structural agreement is defined as the extent to which the details of the exchange relationship are discussed in relational exchange. The variables such as relational trust and communication which are the mechanisms of relational governance, are derived from social embedded theory

(SET). This perspective assumes that economic action is embedded in the structures of social relations in modern industrial society, and it further stresses that instead of pursuing economic gain through guile and opportunism, individuals rely on personal relations and networks of such relations. The other two variables used in the proposed conceptual framework are resource exchange and exchange performance. Resource exchange is defined as the extent to which important resources are exchanged between buyer and seller, and exchange performance is defined as the extent to which the buyer is satisfied with the performance of the supplier.

1.4.2 Scope of Time

The COVID pandemic has hit to many countries hard, and Nepal is no exception. The unprecedented, prolonged lockdown has put a stop to normal working hours in business houses. Some countries have still not resumed their normal business hours. However, Nepal has received both vaccines, and the early introduction of a booster vaccine has already increased the confidence among the Nepalese people, which has led companies and organizations to resume their normal working hours. Based on the improvement of the current situation, and the gradual alleviation of COVID-19, this study collected data from July 2022 until September 2021. The study is likely to conclude by the end of this year provided that the recurrence of the pandemic is unlikely.

1.5 Contributions of the Study

The contributions of this research are at both the theoretical and practical levels.

1.5.1 Scope of data the collection

For the data collection, to test the model, the scope is limited to the Nepali context. Although the result from the study is expected to have significance internationally. The data will be collected from the construction industry. At present, there are altogether 325 class A construction companies, 374 class B, 1,347 class C construction companies, and around 15,000 class D construction companies affiliated with the Federation of Nepalese Chambers of Commerce (FNCCI) as per 2020 data.

This study proposes to analyze the organization level, i.e., the unit of analysis is the organization. The questionnaire was mailed to key persons that represent their respective organizations. Those key persons hold positions of Chief Executive Officers (CEO), middle-line managers, and officers. The frame of the sample respondents contains lists of the Chief Executive Officers (CEO), middle-line managers, and officers who are responsible for initiating long-term relationships with other firms. Further, these respondents are partly or fully responsible for making purchase orders.

1.5.2 Theoretical Contribution

Past studies on the inter-organizational network relationship governance literature have widely covered both equity and non-equity-based alliances. Under the equity-based alliance, formal self-enforcing safeguards as economic hostages are intentionally created by partners in alliance to control opportunism (Klein, 1980; Williamson, 1983). Such economic hostages are financial in the form of equity. Under the non-equity alliance, both informal self-enforcing agreements based on trust and structural agreements based on complex contracts are used as effective governance mechanisms to generate relational rents. Although there is growing evidence of the effectiveness of governance mechanisms on the non-equity-based alliance, scant of attention is paid to traditional contracts between the buyer and supplier. Consequently, the interplay of the two governance mechanisms to generate relational rents has been examined mostly from the perspective of R&D alliances. As a result, those studies insufficiently explain the phenomena that have occurred in the contractor network and contractor-supplier relationship due to discrete environmental settings and corporate goals. Therefore, this study augments our theoretical understanding and develops a theory of inter-organizational network governance by providing results from diverse industries. The foremost contribution of this study is to clearly define the inter-firm relationship between the contractor (buyer) and material supplier and to specifically focus on this type of relationship. Several characteristics separate these types of relationships from other inter-firm alliances. Integrated constructs were developed to manifest the holistic views of the buyer and supplier relationship.

This study contributes to the theoretical development of an integrative model for evaluating the effectiveness of the two governance mechanisms in generating

relational rents. Less attention has been paid in the literature to investigating the combined effect of the three theories - Resource Dependence Theory (RDT), Transaction Cost Economy (TCE), and Social Embedded Theory (SET) in generating relational rents. In other words, the adaptability of structural and relational governance in non-traditional contracts is yet to be explored. Based on an extensive literature review, this study proposes hypotheses between these contrasts and demonstrates the effectiveness of the two governance mechanisms on the successful exchange relationship.

The empirical support that is derived from the data obtained from actual relationships is the third contribution of this study. The empirical evidence obtained from this study clarifies the ambiguity in the choice of governance mechanisms and adds more evidence to the argument that structural and relational governance are complementary rather than substituting each other. Prior studies have made this argument from the perspective of strategic alliances such as R&D and multinational collaborations. Given the discrete nature of the contractor and supplier relationship, the present findings, by examining the effectiveness of structural governance in creating a platform for generating trust, accentuate the need to examine such a relationship.

1.5.3 Practical Contribution

From the practical point of view, the conceptual framework developed for this study to examine the factors influencing the relationship between contractors and material suppliers within the construction industry can be broadly applied to other industries. The outcome of this study presents the factors that are not only relevant to the inter-firm exchange relationship, but the proposed framework can also be applied to the study of other strategic alliances, namely the university and industry alliance, R&D alliances, and bio and pharmaceutical alliance. Finally, the current study can also be used as a reference basis for comparative study in related fields such as vehicle manufacturers and suppliers, apparel manufacturers and material suppliers, the government and private sector, and multinational buyers and sellers, to examine the performance of the current relationships among partners and to identify ways to improve prevailing weaknesses.

The evidence obtained from the study will be productive for management in verifying the factors that enhance or weaken exchange relationships so that the firm can achieve information in its favor, improve the weak spots, and cultivate relationships. The awareness of the significance of structural governance laying a platform for developing relational governance could enable decision-makers involved in the exchange relationship to adjust their decision alternatives. They could also identify the factors that can moderate or extreme contractual complexity in the subsequent alliance. The awareness could also improve the exchange performance of suppliers and buyers. Consideration of structural and relational factors can indeed enhance the social reciprocity among the partners in a relationship and achieve common purposes.

1.6 Definitions of Terms

Contractors (buyer)-material supplier inter-organizational relationship refers to the form of the exchange relationship or a transaction that involves the buying and selling of goods and services that are specifically required for construction purposes. In this form of inter-organizational relationship both formal and informal structural agreements are initiated in advance of the exchange of goods and services, and the goods and services involve construction-related materials and information and knowledge about such goods.

Resource dependency refers to the extent to which firms are dependent on other firms in terms of resources that are scarce to them. It also refers to resources that a firm cannot solely generate without having interdependence with another firm. In the inter-organizational network relationship, generally, in the case of contractors and suppliers, a contractor must rely on the supplier for various kinds of goods and services to meet specific objectives. The quality, prices, and delivery of goods and services can have a significant effect on contractors' performance, and that in turn impacts the buyers' perception of suppliers.

Structural agreements can be defined as both non-contractual and contractual agreements between parties in the exchange relationship. Non-contractual agreements refer to the extent to which details are the structural aspects of the relationship discussed

among partners and agreed upon. Contractual agreements refer to the extent to which structural aspects of the relationship are included in a formal relationship contract.

The term relational governance refers to the exchange largely based on a social component. According to this perspective, economic action is embedded in the social structure and that embeddedness creates economic opportunities that markets, contracts, or vertical integration cannot replicate. Relational governance places more emphasis on trust, and it is argued that frequent communication, such as face-to-face dialogue between parties in the relationship can create trust.

Material exchange, in this context, is defined as the exchange of goods between two parties in the exchange relationship. The goods that are exchanged between parties strictly involve materials, tools, machinery, and equipment related to construction. Knowledge and information refer to the technical know-how regarding the use of tools, machinery, and equipment for the proper purpose.

1.7 Organization of the Study

This dissertation combines Resource Dependence Theory (RDT), Transaction Cost Economy (TCE), and Social Embedded Theory (SET). It is argued that these three perspectives are inter-temporarily connected and repeated transactions and interaction over time develop trust through familiarity. From the RDT perspective firms enter into an inter-firm relationship with another firm to obtain resources that they solely cannot. Under the assumption of TCE, economic actors are rationally bounded and potentially opportunistic, and firms draft a contractual agreement that allows partners to reduce uncertainty about the future behavior of other partners. Derived from social exchange theory, Social Embedded Theory (SET) argues that repeated interaction in which economic transactions are embedded develops interpersonal trust that functions to facilitate the production of IOT (Inter-organizational Trust).

Chapter 1 begins with the topic, its significance, the objective of the study, the scope of the study, and definitions of terms. Further, the contribution of the study from both theoretical and practical perspectives, and the organization of the study are discussed.

Chapter 2 provides information about the current scenario of the Nepalese construction industry, its prospects, the different stakeholders involved, inter-firm networks in the construction industry, the challenges faced by contractors, and problems in the construction industry.

Chapter 3 reviews the related literature on the theoretical frameworks. As already discussed, it is surmised that RDT, TCE, and SET are inter-temporarily connected. Hence structural governance is based on the assumptions of the transaction cost economy (TCE), and relational governance is based on the assumptions of social embedded theory (SET); and firms enter into an inter-organizational relationship (IOR) to obtain resources (RDT) that they solely cannot generate. These are introduced as landmark theories to investigate the successful relationship between buyer and seller in the construction industry. A conceptual framework for analysis is introduced together with derived hypotheses, research variables, operational definitions, and structural equations.

Chapter 4 elaborates on the research methodology applied in the study, describes the proposed research design, the population of the study, the research design, the unit of analysis, the data collection procedures, the methods of the data analysis, and the scale of the construction of variables and measurement, together with the reliability test.

Chapter 5 deals with the findings. The collection and analysis of the data to test the hypotheses proposed in Chapter 4, together with descriptive statistics, are described.

Chapter 6 concludes the study with a discussion of the results and provides some insights into the implications of the findings and suggestions for future research.

CHAPTER 2

THE NEPALESE CONTEXT OF THE CONSTRUCTION INDUSTRY

2.1 Introduction to the Construction Industry in Nepal

It is said that Nepal's construction sector makes a significant contribution to the nation's GDP (Gross Domestic Product). The contribution is around 10-11% according to a 2019 report. This sector uses almost 30% of the total government budget. Altogether there are, 325 class A, 374 class B, 1,347 class C, and around 15,000 class D contractors as per 2020 data. These contractors are involved in various kinds of projects from both the government and private sector. The projects from governments are primarily focused on the infrastructure development of Nepal such as hydropower projects, dams, irrigation, roads and highways, and urban city development.

The licensing and classification of contractors came into practice after the implementation of the construction classification Regulation in 1975 as Class A, B, C, and D respectively depending upon their physical facilities, resources, and experience, which again was amended in 1994 and 1999. Therefore, according to construction business rules 2056 B.S (2000 AD), class A, class B, class C, and class D contractors are further classified in terms of their financial capacity, work experience, human resources, and machine and equipment (table 2.1)

Class A contractors or construction companies refer to those that hold a general class "A" license or certificate. To register as class "A", a construction company must have minimum running capital of NRs. 10.00 million. The company must register with the Department of Industries as a private or public limited company or partnership firm under The Nepal Government. To qualify as class "A" a contractor must have satisfactorily completed four different public construction works valued at NRs. 10 million with each or various such works valued at a total of NRs. 60 million. Also, a company must have a qualified staff. An aspiring company must have two technicians

having passed the graduation level in civil engineering, four technicians having passed the certificate level in that subject, and several other auxiliary staff members with sufficient qualifications in their respective fields such as accounting and other administrative fields. Finally, a company must have at least 4 items of heavy equipment listed in the rule book.

Class B contractors or construction companies refer to those that hold a general class “B” license or certificate. To register as class “B” a construction company must have a minimum running capital of NRs. 5 million. The company must register with the Department of Industries as a private or public limited company or partnership firm under the Nepal Government. To qualify as class “B,” a contractor must have satisfactorily completed four different public construction works valued at a minimum of NRs. 8 million each, or various such works valued at a total of NRs. 2 million. Further, a company must have a qualified staff. It is necessary that an aspiring company have one technician having passed the graduation level in civil engineering two technicians having passed the certificate level in that subject, and several other auxiliary staff members with sufficient qualifications in their respective fields such as accounting and other administrative fields. Finally, a company must have at least 2 items of heavy equipment listed in the rule book.

Class C contractors or construction companies refer to those who hold a general class “C” license or certificate. To register as class “C” a construction company must have a minimum running capital of NRs. 10 million. The company registers with the Department of Industries as a private or public limited company or partnership firm under the Nepal Government. To qualify as class “C”, a contractor must have satisfactorily completed four different public construction works valued at NRs. 1.00 million each, or various such works valued at a total of NRs. 4 million. It is also necessary that a company have one technician with a civil engineering degree, two technicians with a certificate level in civil engineering, two persons with a graduate degree in any subject, three persons with a certificate level in any subject, and one person with a graduate degree in commerce. Finally, a company must have at least 1 item of heavy equipment listed in the rule book.

Class D contractors or construction companies refer to those that hold a general class “D” license or certificate. To register as class “D” a construction company must

have a minimum running capital of NRs. 1.00 million. The company registers with the Department of Industries as a private or public limited company or partnership firm under the Nepal Government. A company must hire one technician with a certificate level in civil engineering, one admin staff member with a certificate level in any subject, and one person with a certificate level in commerce.

Table 2.1 Classification of Contractors in Terms of Financial Capacity, Work Experience, Human Resources, and Machine and Equipment.

Class	Financial Capacity	Work Experience	Human Resources	Machine and Equipment
Class A	Minimum capital requirement of NRS. 10.00 Mil	4 different public projects valued at NRs 10.00 Mil or other works valued at 10.00 Mil	2 technicians with civil engineering degrees, and 4 technicians with certificate level.	Must have at least 4 items of equipment listed in the rule book.
Class B	Minimum capital requirement of NRs. 5.00 Mil	4 different public projects valued at 8.00 Mil or others works valued at 2.00 Mil	1 technician with civil engineering degree, two technicians with certificate level	Must have at least 2 items of equipment listed in the rule book.
Class C	Minimum capital requirement of NRs. 10.00 Mil	4 different public projects valued at NRs. 1.00 Mil or other works valued at NRs. 4.00 Mil	1 technician with civil engineering degree, and 2 technicians with certificate level	Must have at least one item of equipment listed in the rule book.
Class D	Minimum capital requirement of NRs. 1.00 Mil	Not required	1 technician with certificate level in civil engineering, and 1 administer with certificate level in any subjects	Must have water pump, level, and vibrator.

Note: author's own elaboration

2.1.1 A Brief History of Infrastructure Development in Nepal

The road development in Nepal embarked on the first motorable road that was constructed in the Kathmandu Valley around 1924. Due to the unfavorable geographic condition of Nepal, the road length of the country was only 376 km until 1950. Since then, the government of Nepal (GON) has been giving high priority to the development of roads. The major road development linking Kathmandu with the southern border of Nepal began in 1953 with Indian assistance and was opened for traffic in 1956. By 1966: another highway linking Kathmandu-Kodari (northern border) was constructed by the government of China. At the same time, the GON initiated the construction of the east-west highway (1,028 km) with the support of bilateral and multinational agencies. The national highway together with the feeder roads constitutes the Strategic Road Network (SRN) of the country. The district roads together with the village road constitute the District Road Network. At present, the SRN consists of 15 national highways and 51 feeder roads totaling 7,917 km. By 2016 the government of Nepal had planned to extend SRN to 9,900 km by 2016. The principal agencies involved in the planning stages of a project were the Ministry of Physical Planning and Works, the Department of Roads (DoR), the Ministry of Finance, and the National Planning Commission.

It was on May 22, 1911, when the first hydropower development began in Nepal by installing 500 KW (kilowatts) of electricity at Pharping named Chandra Jyoti but it took another 25 years long years to start the second project. In 1936, the Sundarijal Hydropower Plant with a capacity of 900 KW was initiated. Hydroelectricity development in Nepal was once again stalled for decades, until 1939 when the Morang Hydropower company was established, subsequently completing the construction of a third Letang Hydropower plant with an installed capacity of 1800 KW in 1943 under a public-private partnership. The plant supplied electricity to Biratnagar Jute Mill and later it was destroyed by a landslide. Historically, Nepal's first bilateral agreements with India were the Koshi and Gandak projects in 1954 and 1959, respectively, exclusively designed to cater for irrigation and flood control in India with small irrigation and hydropower components in Nepal.

The late 1960s saw a rapid development in the hydropower sector. In that era, Nepal received a series of assistance from foreign countries such as the then USSR to

construct 2.4 MW (Mega Watt) at Panauti, India (Trisuli-18 MW, Devighat -1.4 MW, Gandak-15 MW, Surajpura-Kosi-20 MW) and China (Sunkhoshi 10 MW, built-in 1972 as a gift to Nepal from China). The 92 MW Kulekhani Hydropower Plant (I and II) was commissioned in 1982, which is the only project offering seasonal water storage in Nepal. The 144 MW Kali Gandaki, a hydropower project, commissioned in 2003 is the biggest hydropower project in Nepal so far. In 2005, a plan to develop the Kaligandaki-Nawalpur diversion (multipurpose) project (with about 20 km tunnel) to generate 22 MW of electricity was formulated but it could not be materialized.

2.1.2 The Major Challenges of the Construction Sector

The construction sector in Nepal has been tested with several major challenges.

1) First, in the hope of getting better jobs abroad, all of the knowledgeable and skilled labor have fled the nation. This has resulted in a brain drain, especially in the construction sector. Overall, it is also evident that competent and skillful tech professionals have been scarce.

2) The sluggish cash-flow procedure of the government has resulted in delays in announcing the annual budget. Once the annual budget is delayed the government spending gets postponed, precluding contractors from completing their job on time.

3) Third, separate authorities conduct the design of the infrastructure, its construction, and its supervision. This has created confusion among the designers, contractors, and supervisors, thereby affecting the infrastructure that has been constructed.

4) Lack of cooperation of locals with contractors, when government delays in compensating for the acquisition of land, has also delayed the completion of projects.

5) The heavy equipment such as excavators have been used excessively in the construction of roads without any planned development. This has caused landslides, slope falls, and environmental degradation.

2.2 The value Chain/Network of Construction Industry

The value chain/network of the construction industry primarily constitutes all classes of registered contractors, material suppliers (both formal/informal), informal sub-contractors, labor contractors, and other stakeholders that are directly associated with construction projects (Figure 1). These other stakeholders constitute, regulating bodies (government/local government), employers (private and public sector), trade unions, professional facilitators (consulting engineers), chambers of industry/commerce, training providers, insurance providers, and others.

2.2.1 The Role of Stakeholders

Regulating bodies, both government and local government, are authorities that supervise the conduct of contractors by creating provisions related to licenses, work ethics, and supervision. These bodies are responsible for compensating locals should their land be acquired for construction. They also act as a third-party arbitrator to settle disputes should there be conflicts among contractors and locals or trade unions. These bodies conduct periodical audits to ensure that projects meet all of the regulatory requirements have strictly followed ethics and that all of the work done is aligned with general compliance.

Employers include both the private and public sectors. These employers create jobs for contractors. All of the construction related to real estate development, hydropower, private housing, and apartments generally comes from private employers. They are real estate developers, hotel owners, businesspeople, entrepreneurs, hydropower developers, etc. Infrastructure development projects that are exclusive to roads and highways linking urban cities with rural areas are initiated by public sectors. Some projects from the public sector also include the construction of the president's office, the departments of government offices, central offices of the Central Bank of Nepal, ministry offices, etc.

There are three major federations of trade unions in Nepal. The first is the General Federation of Nepalese Trade Unions (GEFONT) affiliated with UML Maoist. The Nepal Trade Union Congress Independent (NTUC-I) affiliated with the Nepali Congress is the second. All of the Nepal Federation of Trade Unions (ANTUF) are

affiliated with United Maoists. These trade unions are responsible for ensuring that workers in the construction sector are treated fairly. They have also been responsible for fixing the minimum wages for laborers of all social classes, and have also been responsible for establishing balanced and equitable bargaining positions for the workers suffering from social imbalances caused by inherent weak social status including social economic, political, and education factors.

Five important training providers have established their ground in the value chain of the construction industry in Nepal. They are:

1) The Council of Technical and Vocational Education Training (CTEVT) under the MOE (Ministry of Education)

2) The Vocational and Skill Development Training Center Under MOL (Ministry of Labor)

3) The Occupational Safety and Health Project (OSHP) Under the MOL.

4) Private training institutes including technical/engineering colleges

Private training institutes and technical/engineering colleges seek permits to run training programs from regulating agencies such as CTVET, EVENT, and others responsible for providing training to the laborers to upgrade their vocational skills. These training providers annually provide training to around 500,000 candidates. The National Skill Testing Board (NSTB), which operates under the CTEVT, has developed National Occupational Skill Standards/Profiles in 265 different occupations, and around 170,000 candidates are skill tested and 132,000 are certified annually.

Professional facilitators such as consulting engineers prepare feasibility reports for the projects to be undertaken. A feasibility report is a document that assesses potential solutions to business problems or opportunities and determines which of these are viable for further analysis. These reports play an important role as the entire project is based on the contents and details provided by the report. A feasibility report must describe the project, accentuate potential solutions resulting from the project, list all of the criteria for evaluating those solutions, state which solutions are most feasible for the project, and make a concluding statement. It is a study report that considers all of a project's relevant factors including economic, technical, legal, and scheduling considerations to ascertain the likelihood of completing the project successfully.

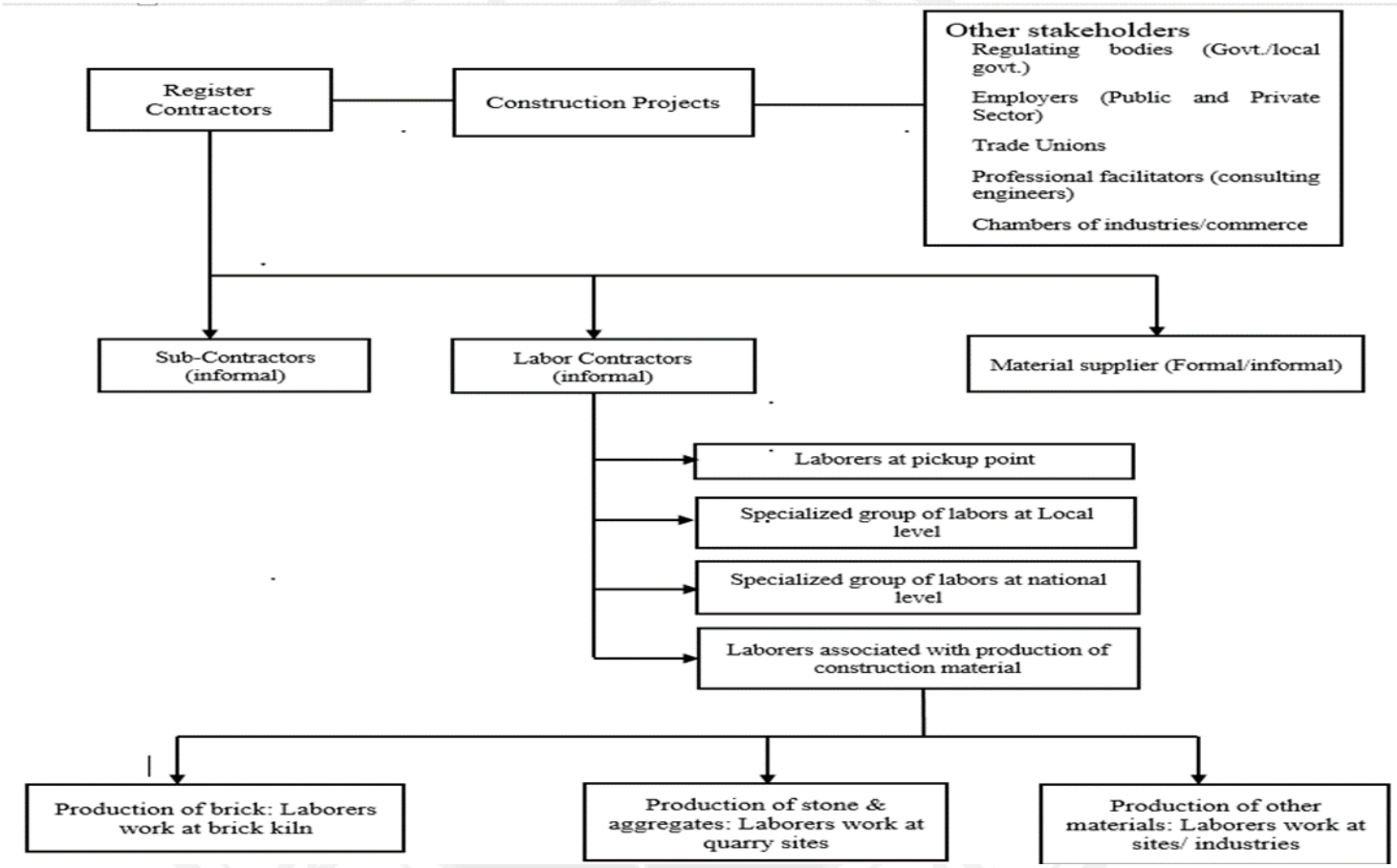

Figure 2.1 Stake Holders in the Construction Industry in the Nepalese Context

Note: Presentation by the Nepal Engineers Association (NEA)

Besides stakeholders, that have a close or direct association with construction projects, some stakeholders have major significance in the value chain of the construction industry. These stakeholders are material suppliers (formal and informal), labor contractors (informal), and sub-contractors (informal)

Material suppliers are those supplies tools, machinery, equipment, construction-related materials, and miscellaneous items. For example, for the construction of the building, the materials required are steel frames, bricks, cement, electrical systems, elevators, doors, windowpane, furniture, paints, etc.

Labor contractors are those that supply labor to the contractors once the project begins. These labor contractors are generally informal, and they can be categorized as laborers at the pick-up point, specialized groups of laborers at the local level, specialized groups of laborers at the national level, and laborers associated with the production of construction materials (figure 1). Laborers associated with the production construction of materials are involved in the production of bricks at the kiln, the production of stone & aggregates at quarry sites, and the production of other materials on site.

In the Nepalese context, some forepersons take minor jobs for contractors, and they are also called informal sub-contractors. These foremen have generally 5 to 10 workers under their contract and they perform small jobs such as installing windowpanes, doors, cement flooring, painting, parqueting, tiling, wallpapering, guarding sites, etc. These forepersons can also take responsibility for constructing private individual homes for families; these individual homes are informal and different from those in housing colonies.

2.2.2 The Nepalese context of construction bidding

Construction bidding in Nepal, like any other country, is done in five major steps, namely bid solicitation, bid preparation, bid submission, opening and evaluation of bid, and contract award.

1) Bid Solicitation: Suppose that the National Planning Commission Secretariat (NPCS) operating under the Government of Nepal (GON) wishes to allocate some funds to construct a vehicle parking area. The invitation for a bid goes in this manner: the Government of Nepal, the National Planning Commission Secretariat, has

allocated funds towards the cost of Physical Infrastructure Improvements and intends to apply part of the funds to cover eligible payments under the Contract for Vehicle Parking Area Construction, with Contract Identification No. 2/wks/2073/74. This bid will be open to all eligible bidders. The NPSC invites sealed bids from eligible bidders. All general criteria will be mentioned in the invitation; for example, a bidder must be a firm or a company, must possess a Business Registration License or a Civil Works Contractor License or Certificate, must have a PAN and VAT certificate, must have cleared tax for the last fiscal years, and must submit a written declaration stating that the bidder is not ineligible to participate in the bid; have a conflict of interest in the proposed bid procurement proceedings and not have been punished or convicted by any court of law relating to his legal profession or business-related offense. The employer will also mention the estimated amount for the work in the invitation. If the estimation amount is NRs. 3.70 million, then it shall be mentioned clearly.

2) Bid preparation: Assuming that a bidder is eligible, the next step is preparation. In this step, the bidder compiles all of the necessary documents required and all of the related documents are either in English or Nepali; the documents comprise the bid and a qualification/eligibility information paper, bid security documents, a priced bill of quantities, and a rate analysis (optional at the request of employer). The bidder furnishes bid security in Nepalese rupees equivalent to the amount specified in the bidding data, and the bidder either obtains bank a guarantee from a bank or deposit amount, as a bid security, equivalent to the amount specified in the bidding data. One original and one duplicate copy of the bid, generally typed, is signed by an authorized person or persons on behalf of the bidding firm/company before submitting the bid.

3) Bid submission: The bidder submits one original and a duplicate copy of the bid. These bids are placed in sealed envelopes. Both the sealed envelopes are placed in an outer envelope, which is also sealed. The inner envelopes are duly marked as “Original” and “Copy”. The envelopes are addressed to the employer at the address provided in the bidding data and bear the name and identification number of the contract. A pre-bid meeting, if necessary, is held at least 10 days before the bid submission date. Any amendment to be made in the bid after the pre-bid meeting is issued within 5 days of the meeting and the addendum is circulated to all the purchasers of the bidding document. The addendum thus issued becomes a part of the bidding

document. Any bid received by the employer after the deadline is deemed void. Bidders have the discretion to withdraw or change bids with written notice.

4) Opening and evaluation of the bid: The employer opens the bids in the presence of the bidders' representatives, who choose to attend at the time and in the place specified in the bidding data. The bidders' names, the bid prices, the total amount of each bid, any discounts, bid modifications and withdrawals, the presence or absence of Bid Security, differences of the rate in words and figures, the quoted price for alternate technical specifications if proposed, whether the bid form has a signature of the bidder or an authorized representative, corrections/effacements or obliterations in the bidding document, any remarks made by the bidder in the bid form, details of the rates if requested, and such other details as the employer may consider appropriate is announced by the employer at the opening. The employer prepares and provides the minutes of the bid opening, including the information disclosed to those present. For the sake of confidentiality, information related to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract are not disclosed to bidders or any other persons not officially concerned with this process until the award to the successful bidder is announced. In advance of the detailed evaluation of bids, the employer determines whether each bid (a) meets the eligibility criteria; (b) has been properly signed; (c) is accompanied by the required securities; and (d) is substantially responsive to the requirements of the bidding documents. A substantially responsive bid conforms to all of the terms, conditions, and specifications of the bidding documents, without material deviation or reservation. Bids determined to be substantially responsive are checked by the employer for any arithmetic errors. The employer evaluates and compares only the bids determined to be substantially responsive. Further, the employer evaluates: a) whether the construction work plan, work performance schedule, and mobilization period are consistent with the requirement of the bidding document or not; b) whether the quoted item unit rates in the bill of quantities are reliable or not; c) Whether or not the quoted price is unbalanced due to unnaturally high rates quoted by the bidder for work items to be completed in the initial stages of the contract or for work items whose quantities are assumed by the bidder to be underestimated.

5) Contract award: The Employer awards the contract to the bidder that has offered the lowest evaluated Bid Price, provided that such Bidder has been determined to be eligible by the provisions. Employers also reserve the right to accept or reject any bid and to cancel the bidding process and reject all bids, at any time before the award of the contract. Employers do not incur any liability should their action affect any bidder.

2.3 Future Prospects of the Nepalese Construction Sector

Despite several severe shocks in the past - conflicts, unstable governments, earthquakes, and trade disruptions - Nepal has made strong progress in reducing poverty and boosting shared prosperity. With the decade-long peace and constitutional process concluded the Government of Nepal is keen to accelerate economic growth and become a middle-income country by 2030. Between 1996 and 2011, the proportion of households living in extreme poverty fell from 46 to 15 percent. Nepal's macroeconomic fundamentals have remained sound.

Nepal's historic transition to a federal state system is expected to increase public expenditure, partly due to higher infrastructure spending. In 2017, Nepal transitioned to a federal state system with about 3,400 village development councils consolidated into 753 local government units. As estimated by the World Bank, by 2021, on average, total expenditure is likely to grow by 3-4 percent of gross domestic product (GDP) per year, because of the implementation of the federalism structure.

Through private sector solutions, including public-private partnerships (PPPs), experience and current project preparation have shown scope for infrastructure development in the energy, transport, and urban sectors, encompassing a range of contract types. The nature of the project types currently found in Nepal ranges from PPPs to operation and maintenance contracts. In 2015, the Government of Nepal introduced a PPP policy, which emphasizes the importance placed on infrastructure development and, where appropriate, through private sector participation. A PPP law is currently under preparation.

2.3.1 Energy Sector

To enhance Nepal's economy, the electricity sector is regarded as one of the most strategically important areas for two reasons. First, the lack of adequate electricity is a barrier to higher economic growth. According to the World Bank, the Nepalese consume, on average, just a twentieth of the global average of electricity and a fifth of the South Asian average. Load shedding imposed economic costs of up to US$1.6 billion per year during 2008-16. Accordingly, increasing the electricity supply would create a large economic benefit. Second, Nepal has an opportunity to earn revenues by exporting valuable hydropower to the South Asia region. Recognizing this, the government has set an ambitious target of installing 3 gigawatts (GW) of generation capacity in three years, 5 GW in five years, and 15 GW in 10 years. The government is pursuing reforms to increase the capacity of public sector institutions and to improve the investment climate in the sector.

2.3.2 The Transport Sector

The transport sector is significant for Nepal's economic growth; safe roads and airports help to connect the population to markets and opportunities. The tourism sector, which contributes over 8 percent to Nepal's GDP and is therefore one of the country's biggest job creators, also relies heavily on adequate connective infrastructure. Currently, however, the roads are often congested and not properly maintained, which often results in high vehicle operation costs. The country's only international airport has exceeded capacity and the road network does not adequately connect tourism areas. Consequently, the population pays higher prices for basic daily goods and services. Therefore, the key objective of Nepal's transport sector in the medium term will be to address chronic underinvestment to improve connectivity, reduce travel time, and improve safety.

Sustainable and affordable transport infrastructure is necessary for Nepal, and it will require judicious use of public and private sector resources. This will take place in the context of the new federal system: Nepal's new Constitution places national highways, railways, national transport policy, civil aviation, and international airports under the federal government's responsibility. Provincial governments manage provincial highways and provincial-level transport. Local-level governments are

responsible for local-level roads in urban and rural municipalities, including agricultural roads.

In Nepal, the SRN (13,060 kilometers (km)) constitutes the primary road network and includes national highways, feeder roads, and a few urban roads of national importance. About 40 percent (5,300 km) of SRN roads are national highways, which are considered commercial road infrastructure; of these, 60 percent are blacktop roads. Nationwide 53 percent of roads are blacktop. The rest are gravel (16 percent) or earthen roads (31 percent). The road density of the SRN is 9.26 km per 100 square meters (m2), compared with 50 km per 100 m2 for the SRN and local road network together. Based on various government agencies' plans, the Government of Nepal estimates an annual funding requirement of US$1.15 billion per year until 2025 to meet the investment backlog in the country's road infrastructure.

2.3.3 The Airport Sector

Nepal's lack of adequate air connectivity is a constraint to economic growth. The country's only international airport, Tribhuvan International Airport, exceeds capacity (source: World Bank report 2019). This is inhibiting economic growth by stifling the movement of the domestic population and hindering the tourism sector. The airport sector has not received sufficient attention in the past decade and requires substantial investment. International arrivals exceed the official capacity of Nepal's international airport, Tribhuvan International Airport, and air routes to enter Nepal are limited to long-haul markets. The number of airports serving mountainous areas is insufficient. The operation and management of key airports are subpar, and Nepal's domestic carriers have a poor safety record. Currently, 25 international airlines fly into Nepal and two Nepalese airlines fly internationally. Nineteen domestic carriers offer flights in Nepal.

Recognizing the need for improvements, two new international airports, Pokhara and Bhairahawa, have already been completed. Furthermore, a master plan was prepared for the construction of a new international airport for Kathmandu, the Second International Airport in Nijgadh. However, due to environmental issues, the project is currently being stalled.

According to the World Bank, estimates for various airport upgrades and new developments indicate a funding requirement of US$600 million per year until 2030. This includes funding for the anticipated expansion of Tribhuvan International Airport in Kathmandu (proposed for funding by the ADB), and the development of Pokhara Regional International Airport (with financing from the Government of China) and Gautam Buddha Regional International Airport in Bhairahawa (presently, it is under land acquisition and proposed financing from the ADB and other development partners).

2.3.4 Urban Transport

According to the ADB (Asian Development Bank) report 2017, the existing public transport system in Kathmandu Valley is complex and provides a low level of service to users. It is comprised of seven bus routes, 93 minibus routes, 73 microbus routes, and 20 tempo routes, totaling approximately 200 routes. The public transport network suffers from an oversupply of vehicles on some routes as well as a duplication of routes with multiple uncoordinated operators. The complex and inefficient routes require a multitude of terminals and loading areas, most of which are inadequate for passengers or are in poor condition and contribute to ever-growing traffic congestion. The congestion is exacerbated by many low-capacity vehicles operating on high-volume routes, leading to poor air quality and environmental degradation.

Citing the need for proper urban transport, the Government of Nepal (GON) has undertaken studies to assess options for improving the urban transport infrastructure in Kathmandu Valley by adding new means of transportation. The options include, among others, suburban and intercity railway systems. At present, an ADB-funded study entitled “Mass Transit Options and Prioritization in Kathmandu Valley” has recommended a metro rail system comprising about 73 km as the most appropriate mass transport option for Kathmandu Valley. The cost is estimated at US$100 million per km, plus investment for rolling stock and operation costs (only indicative numbers are available).

2.3.5 The Urban Sector

Although Nepal is one of the world's least urbanized countries, its urban population growth is among the fastest globally, with an annual rate of 3.2 percent between 2010 and 2015 (World Bank Report 2019). Nepal's rapid urbanization has increased pressure on the country's core urban infrastructure, creating an urgent need to assess key challenges in the country's urban sector and to identify opportunities to overcome them by maximizing largely untapped private capital and expertise.

The country's historic shift from a unitary to a federal government system has expanded the role of local governments, particularly in the delivery of basic public services, such as education and health, and core infrastructure, including water supply, sanitation, and solid waste management (SWM).

Just 62 percent of municipal solid waste was collected as of 2012, although the collection rate varied substantially across municipalities (major towns had higher percentages than smaller ones). As of 2013, only six of 58 municipalities used sanitary landfill sites for final disposal; 45 municipalities practiced open dumping, including riverside and roadside (source: ADB, Manila, 2013). Although access to toilets in urban Nepal increased from 81 to 85 percent from 2003 to 2010, many toilets remain unsanitary. Only 48 percent of urban households had toilets connected to septic tanks, many of which were not designed properly.

The government's 2017 National Urban Development Strategy provides strategic direction for urban infrastructure development and guides investment decisions in the sector under the new federal structure of governance. The National Urban Development Strategy articulates a long-term vision for urban development, including augmenting urban sector financing and changing the legal and institutional framework to facilitate project implementation. In the SWM sector, the National Urban Development Strategy promotes integrated SWM projects, wherever feasible, as well as a cluster-based approach to achieve economies of scale. In the water supply and sanitation sectors, minimum water provisioning, water security, and sanitation coverage are articulated as part of the sector objectives.

2.4 Conclusion

Although as described by the World Bank there is a substantial shortage of annual funding by the state, which has precluded a significant number of projects from being completed, yet there is hope for infrastructure development in Nepal. The overall public spending in subsequent years is expected to increase since Nepal's historic transition to a federal system. Anticipating the influx of tourist arrivals in the following years, there has been considerable pace in real estate development such as hotels, resorts, and apartments. Two new international airports, in Pokhara and Bhairahawa, have already been completed, as stated above the increasing population in cities has demanded expansion in the urban sector. This has resulted in the development of housing societies, apartments, and condos. Therefore, considering the ongoing infrastructure development calls for a significant role of the construction sector, especially on the part of contractors, materials suppliers, and other stakeholders. This has also been a demand for the integration of structural and relational governance to ensure quality work that is only possible from successful relationships between suppliers and contractors. Contractors, to deliver quality work, must have proper materials along with skills and technical know-how. One of the many dimensions of a quality job is also the successful relationship with the suppliers. Hence, the proposed conceptual framework in Chapter 4 explains the significance of the adaptability of structural and relational governance to provide a domain for trust between suppliers and buyers that will result in a successful relationship.

CHAPTER 3

LITERATURE REVIEW

In today's dynamic environment where firms are often pestered by exogenous factors, to remain competitive, the need to seek resources that are unique and crucial for remaining formidable against competitors has led firms to enter inter-firm relationships with other firms. Firms and organizations in one way or another must enter dyad exchanges either in the form of strategic alliances or exchange relationships with suppliers. When two or more organizations jointly perceive collaboration as beneficial, an alliance between them is established so that can achieve common goals and together determine external opportunities (Mitsuhashi & Greve, 2009). According to the market logic of RDT, firms are often heavily dependent on the market and are constrained by the actors in that market. Hence, to circumvent such constraints, an alliance is formed with those actors. In contrast to RDT logic, firms enter an alliance to cultivate inter-organizational relationships, establish social networks, and achieve social power (Gulati, 1998).

According to Gulati (1998), firms entering a strategic alliance face five crucial issues. These issues are the formation of alliances, the choice of a governance structure, the dynamic evolution of alliances, the performance of alliances, and the performance consequences for firms entering alliances. Therefore, this research advances theoretical work by focusing on the relationship between exchange relationship formation and the choice of governance structure, and the choice of governance structure and the performance of the buyer-supplier relationship. The conceptual framework is developed through the perspective of the dynamic evolution of alliances.

This chapter, therefore, is organized in three parts. The first part delivers an overview of the inter-organizational relationship, especially focusing on contractors and the material supplier dyad exchange relationship, together with five crucial issues of alliance research, and three important governance choices that Williamson (1991)

called “Market”, “Hybrid”, and “Hierarchy”. The second part presents the theoretical and empirical literature concerning the determinants affecting the performance of the buyer-supplier relationship. These factors are derived from three empirical works of literature: Resource Dependency Theory (RDT), Transaction Cost Economy (TCE), and Social Exchange Theory (SET). The final part deals with the conceptual framework development from the perspective of the dynamic evolution of alliance, and the research hypotheses of the study.

3.1 Overview of the Inter-Organizational Relationship (IOR) and the Buyer-Supplier Exchange Relationship

To achieve both an economic and social advantage firms connect with other firms via a gamut of social and economic relationships. This inter-organizational relationship is inclusive of supplier relationships, trade association memberships, interlocking directorates, relationships among individual employees, and alliances. When defining the strategic alliance, Yoshino and Rangan (1995) categorized inter-organizational relationships into two types: non-equity-based and equity-based relationships (Figure 2). Under the non-equity-based relationship, there are traditional contracts and non-traditional contracts. Traditional contracts include three important types; namely, arm’s-length buy/sell contracts, Franchising, Licensing, and Cross-licensing. On the other hand, non-traditional contracts are inclusive of joint R&D (Research & Development), joint product development, Long-term sourcing arrangement, joint manufacturing, joint marketing, shared distribution/service, and standards-setting/research consortia.

Likewise, the equity-based relationship is categorized into three types: no new entity, the creation of entity, and the dissolution of entity. Under the no new entity, two kinds of alliances are associated: minority equity investments and equity swaps. The creation of an entity includes alliances such as non-subsidiary JVs (Joint Ventures), and the JV subsidiary of MNCs (Multinational Corporations). Lastly, under the dissolution of an entity, two types of inter-firm amalgamations are associated: mergers and acquisitions. Yoshino and Rangan (1995) were prudent when

defining the strategic alliance; they indeed had an unusually restrictive perspective of what constitutes strategic alliances. They did not even consider a classic joint venture between MNCs and a local company, as a strategic alliance, where a multinational parent company and local company create a separate entity. Neither the traditional contract, such as the arm's length buy/sell contract, franchising, licensing agreements, or even joint ventures where a parent company has a dominating role over the local company, was considered a strategic alliance. According to them, a strategic alliance is exclusive to those alliances where partnering firms must have symmetrical power control; in other words, they must share control over the performance of their joint project as well as control over residuals, and make equal and continuing contributions of knowledge, information, and resources. Some examples include the following:

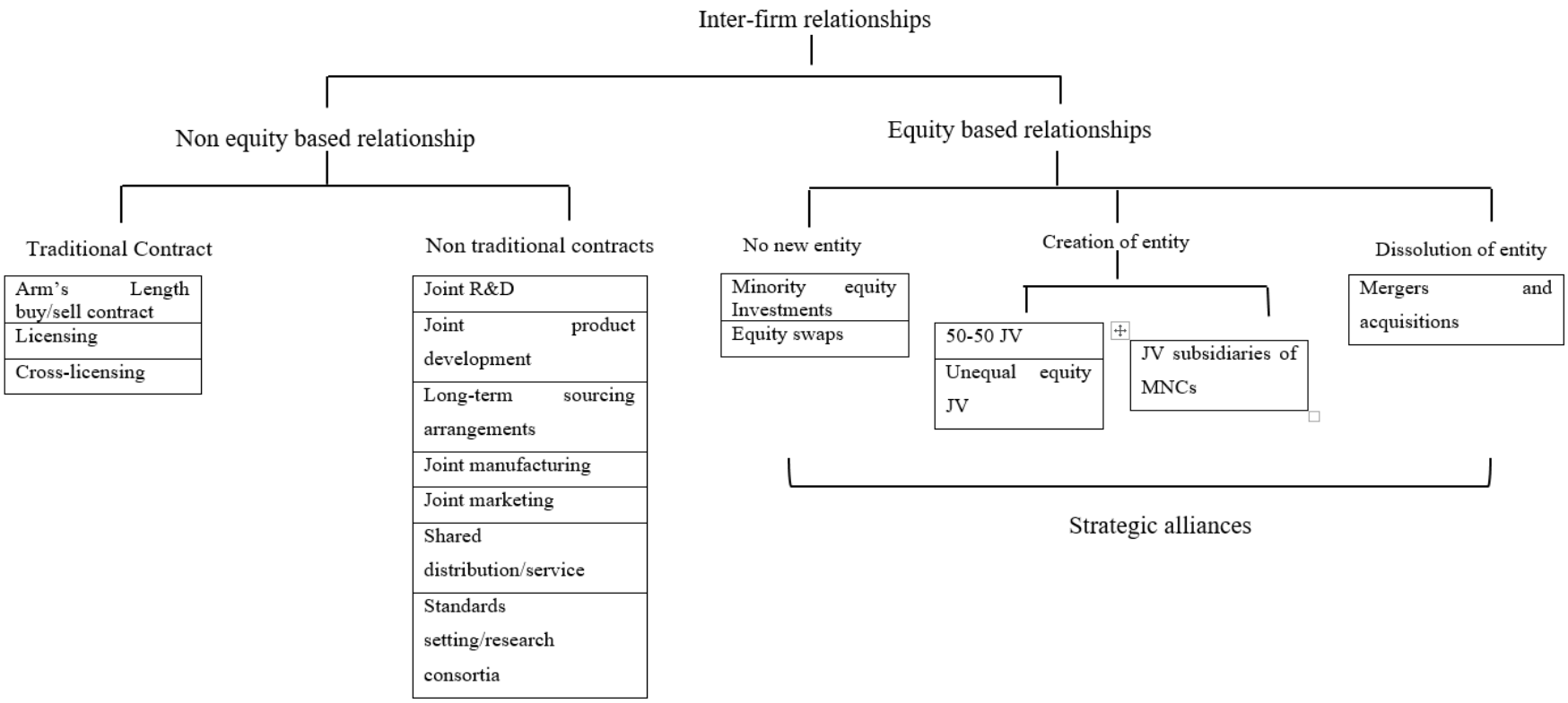

Figure 3.1 Inter-Firm Relationship Categories Based on The Definition of Yoshino & Rangan

Source: Shiraishi and Iijima (2008)

Joint R&D, joint product development, long-term sourcing arrangements, joint manufacturing, minority equity investments, equity swaps, fifty-fifty JV, and unequal JV.

Many scholars have discussed the formation of the inter-firm relationship, and their focus has mainly been on strategic alliances. Firms enter strategic alliances with multiple partners to exchange resources, as inter-firm collaboration plays a crucial role in innovation and product development (Cui & O'Connor, 2012). Certain resource characteristics, namely imperfect mobility, imitability, and substitutability, and promise accentuated value-creation, provide a domain for alliance formation (Das & Teng, 2000). Further, social factors such as trust, the strength of ties between partners, and network resources that have been accumulated through prior alliances can be influential factors in determining the formation of new alliances (Gulati, 1999). A wide array of industries is being focused on by many scholars in discussing the inter-firm relationship. Hoang and Rothaermel (2005), for example, have focused on R&D alliances between biotech firms and pharmaceutical companies; and Greve et al. (2010) have focused on inter-firm alliances between liner shipping. Joshi and Lahiri (2015) have focused on international strategic alliances among semiconductor firms, and Venkatraman and Lee (2004) have focused on inter-organizational relations in the U.S. video game sector.

In discussing the formation of the inter-organizational relationship or inter-firm relationship, Gulati (1998) defined the formation of the IOR in a combination of three elements: the choice of a partner, the contract type of the alliance, and the evolvement of the alliance and the partner's participation over time. The focus was primarily on the strategic alliance and not on the buyer-supplier relationship. Likewise, Yoshino and Rangan (1995) defined alliance formation in terms of governance structure: equity-based governance and non-equity-based governance, specifically focusing on strategic alliances. Shiraishi and Iijima (2008) proposed a new analytical framework for the inter-firm relationship recognizing a firm's business as a system in discussing the formation of inter-organizational relationships focusing only on alliances. The paucity of focus on buyer-supplier relationships by various scholars in discussing the formation of the inter-firm relationship has made this research utterly significant. Indeed, the lack

of proper evidence regarding how social forces constrain firms to maintain stable relationships with suppliers can demand further discussion in the formation of IORs.

Inter-organizational relationships between buyers and suppliers often are embedded in rich and influential social contexts. A buyer can continue to purchase material, tools, and equipment required for production from the same supplier for the foreseeable future if the buyer has developed a rapport with the supplier. Although it has been argued that most of the transactions between buyer and supplier are often an arm's length contract, and their governance structure, their choice of a partner is often shaped by the market; repeated transactions between the same parties can result in trust and one party may perceive the other as less opportunistic and this can lead to long-term relationships. Additionally, it is tedious and costly to search for a new partner. Hence, a firm utilizes its social capital developed from accumulated prior relationships to reduce costs that would otherwise be imminent in searching for a new partner and regarding the risks associated with it (Chung, Singh, & Lee, 2000). A buyer and supplier relationship is not just limited to regular transactions between them, but their relationship can also enter a strategic alliance for joint innovation and supply. Dekker (2004), while conducting a case study of the Dutch railway system, contended that when the discrete market is forfeited, some form of inter-firm relationship between the buyer and supplier is crafted, either in the form of hierarchical governance or in the form of 'hybrid governance'. Hierarchical governance refers to one firm, whereas hybrid governance assimilates a gamut of IOR forms ranging from buyer-supplier relationships, franchising and licensing, and joint ventures such as strategic alliances to inter-organizational networks. He further mentioned three prime interrelated issues in the IOR - motivation for the IOR formation, the choice of governance structure, and the effectiveness and performance of the IOR - and argued how issues of control relate to the second issue, i.e., choice of governance issue.

Yoshino and Rangan (1995), in defining the strategic alliance, included the arm's length buy-sell contract under the non-equity-based relationship, there was no mention of an exchange dyad between buyer and supplier. Hence, it is to be noted that there exists a polarization between the arm's length contract and the embedded relationship in an exchange continuum. Arm's length ties refer to an agreement between two parties that is made freely and independently. In other words, no such special

relations exist between parties, and one party does not have any control over the other. These kinds of ties prevail in an ideal-type atomistic market where exchange is limited to price. Indeed, self-interest motives, price, and the market delineate the actors' decision to switch partners. Buyers regularly switch suppliers depending on the price and agreement.

At the other end of the exchange continuum there exist embedded ties. Actors are more involved in social relationships, and their focus, rather than on short-term narrow economically rational gain, is more on cultivating prolonged cooperative ties (Romo & Schwartz, 1995). Contrary to the arm's length buy-sell contract, in socially embedded ties actors in the exchange are more associated with normative principles and give more importance to equality and fairness. Their actions are justified by social norms and social reciprocity rather than narrow short-term economic gain.

Firms advance from the arm's length buy-sell contract to socially embedded ties for several reasons. First, there persists an imperfect market, which refers to any economic market that fails to meet rigorous standards of a so-called hypothetically purely competitive market, which only exists in theory. Imperfect markets breed networks of actors where there is no full disclosure of information about products and prices, and there are high barriers to entry and exit in the market. Second, like individuals, firms are rationally bound in decision-making. In other words, firms seek decisions that are sub-optimal or act as satisficers rather than making prudent decisions that are conducive to optimal solutions. Third, no agreements or contracts that are made between parties are complete. The bounded rationality limits parties in exchange for drafting incomplete contracts and only the limited part that was agreed on can be enforced by courts of law. Fourth, parties in disputes are more likely to settle matters verbally rather than introducing third-party arbitrators or taking it to a court, as agreements between parties are impartial. Fifth, the interconnection between firms is socially embedded and the history of successful transactions may preclude firms from exiting ties that are socially embedded. The next section deals with five crucial issues, as outlined by Gulati (1998), in alliance research.

3.2 Five crucial Issues Regarding IOR Formation

Gulati (1998) in his study identified five crucial issues for the study of alliances: (1) the formation of the alliance, (2) the choice of a governance structure, (3) the dynamic evolution of alliances, (4) the performance of alliances, and (5) the performance consequences for firms entering alliances. Although these were primarily identified in studying inter-firm alliances, these issues are also identifiable in studying the exchange relationship between buyers and suppliers. Therefore, this study accentuates and discusses the first four issues in the formation of the exchange relationship and uses the exchange relationship instead of the alliance.

3.2.1 The Formation of the Exchange Relationship between Buyer and Supplier

Past studies on the IOR between buyers and suppliers show ample evidence of the existence of embedded ties between them. The relationship outcomes as perceived by the buyer in the exchange relationship with the supplier depend on the level of perceived economic payoffs across all relationships that the buyer has with other buyers with the same supplier (Sa Vinhas, Heide, & Jap, 2012). Strong interpersonal ties between boundary spanners in the exchange relationship have a positive relationship with relationship quality at both interpersonal and organizational levels in the IOR between buyer and supplier (Huang et al., 2016). The role of trust in the inter-firm exchange dyad between buyer and supplier firms at both interpersonal levels and the organizational level, and its effect in managing conflict, negotiation costs, and exchange performance (Zaheer, McEvily, & Perrone, 1998). The embeddedness or the quality of social ties is a logic of exchange that enhances the economies of ties, integrative agreements, Pareto improvement in allocative efficiency, and complex adaptation (Uzzi, 1997).

While reviewing the theoretical explanation of the formation of joint ventures, Kogut (1988) compared two perspectives, transaction costs, and strategic behavior, and outlined three motivations for joint ventures. First, firms like to avoid small numbers of bargaining resulting from transaction costs or to minimize overall high switching costs in the arm's length contract. Second, firms are likely to advance and have

competitive market power over competitors. Third, an aspiring firm will always manifest a “thirst” for acquiring knowledge and learning. These three motivations are broadly applicable not merely to joint ventures but other types of alliances and inter-firm relationships such as the exchange relationship between buyer and supplier. A buyer firm may like to avoid transaction cost hazards and multiple numbers of bargaining from different suppliers and enter an exchange relationship with one supplier to ensure stability and certainty. A buyer firm can enter a long-term exchange relationship with the supplying firm to have a competitive position in the market and to block the entrance of new firms into the market.

This study combines three perspectives – resource dependency theory (RDT), transaction cost economy (TCE), and social embeddedness theory (SET) – as indicated, in discussing the formation of the exchange relationship between buyer and supplier. From the perspective of RDT, firms enter alliances or inter-firm relationships with other firms to acquire resources that they alone cannot produce. These resources are both tangible and intangible. Tangible resources are raw materials that a firm requires to produce finished goods. Intangible resources are both tacit and implicit knowledge that a firm must acquire to survive and have a competitive position in the market. TCE posits that a firm, to avoid uncertainty resulting from contractual hazards chooses a governance structure that is associated with the lowest transaction costs while forming an IOR (Williamson, 1991). From the perspective of SET, firms are likely to enter into an IOR with a firm with which it has shared a history of successful collaboration. This theory argues that a repeated transaction with the same firm generates trust resulting choice of a less hierarchical structure in organizing subsequent alliances.

3.2.2 Governance Structure in the Buyer-Supplier Relationship

As has been discussed, the IOR can be categorized into two types: the equity-based relationship and the non-equity-based relationship. These two types of IOR can also be perceived as governing structures that a firm can choose in structuring its alliances (Figure 3). The equity-based relationship encompasses a 50-50 joint venture, an unequal equity joint venture, multinational corporations (MNCs), minority equity investments, and mergers and acquisitions. TCE posits that firms create joint ventures as separate entities so that they can have proper hierarchical control over parties

involved that are likely to manifest opportunistic behavior and a stabilized relationship. The cost arising from contractual hazards can be avoided by creating a joint venture as equity invested acts as a mutual hostage and a governing mechanism to achieve superior alignment, share profit or residuals, and guarantee performance (Kogut, 1988). These kinds of IOR forms, where the partner shares equity as a mutual hostage to exercise control closely, replicate the hierarchical control features of organizations.

On the other hand, is a non-equity-based relationship; under this relationship firms, instead of creating a separate entity, ally with another firm through a contractual agreement. These kinds of non-equity governance structures include joint R&D, buyer-supplier relationships, arm's length contracts, franchising, and licensing agreements. The choice of a firm to opt for non-equity governance over a joint venture is partly associated with repeated transactions or a history of successful collaboration with the same partner. Although past studies on contract choices in alliances were heavily influenced by transaction cost economists, they normally perceived contract choices arising from uncertainty and opportunistic behavior. From the SET perspective, trust arising from repeated interaction and the history of successful alliances indeed acts as a self-governing mechanism where partners in the alliance or exchange relationship abstain from manifesting opportunistic behavior. Therefore, the greater the number of previous alliances between the same parties in the alliances, the more unlikely the choice of the governance structure to be an equity-based relationship (Gulati, 1995a).

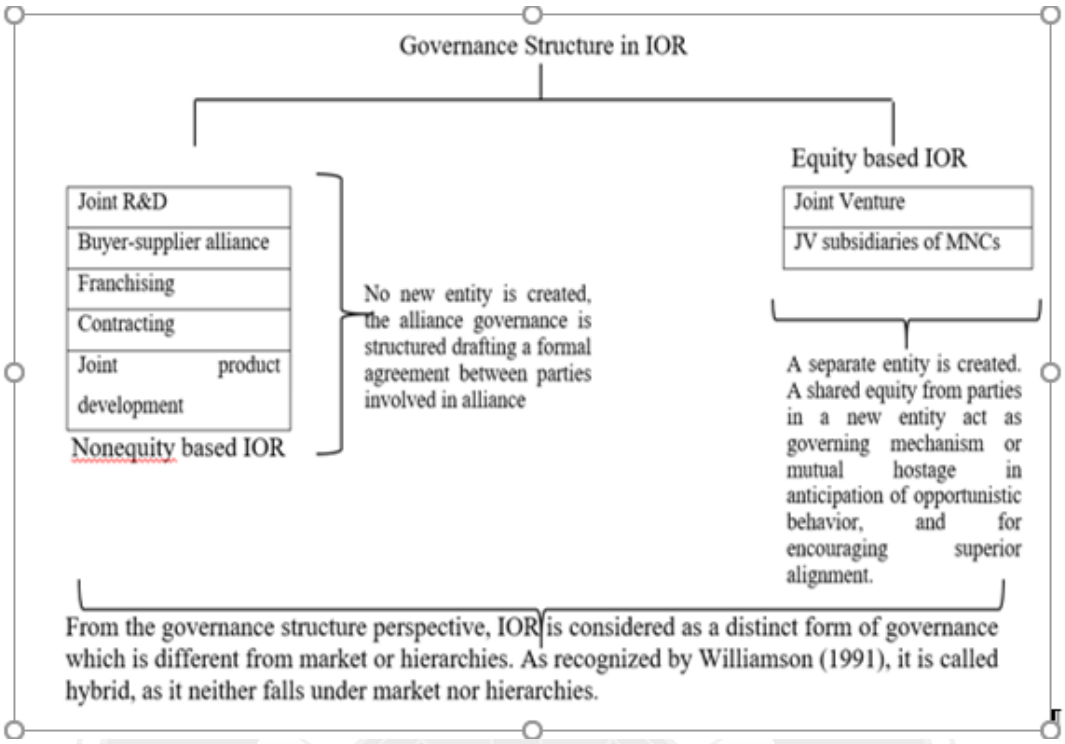

Figure 3.2 Two Types of Governance Structure in IOR

Note: Author's own elaboration

A buyer firm entering into an exchange relationship with a supplying firm, under a non-equity-based relationship, can face appropriation concerns arising from contractual hazards, and behavioral uncertainty. Appropriation concerns arise when collaborating firms invest in assets specifically for the IOR, and these specific assets have very little alternative value outside the alliance. For example, suppose a buyer requires an asset specific to his product development and makes an order with his supplier. The supplier upon receiving the order from the buyer delivers the goods. What if the goods delivered to the buyer do not match the requirement? If a supplier agrees to take back the goods then no appropriation concern arises, but if the goods are to remain with the buyer then appropriation concerns arise as those goods will be sold at scrap value. The specific requirement of goods or raw materials that a buyer needs for manufacturing purposes is called asset specificity, as this asset has no further use outside the IOR.

A contractual agreement is drafted between the buyer and supplier to alleviate appropriation concerns. As no equity is shared between parties, a formal contractual

agreement acts as a governing mechanism to achieve superior alignment. From the buyer's perspective, the governing mechanism is used to ensure that the supplier is performing efficiently and with requisite quality production. The level of asset specificity also determines the complexity of the contractual agreement. The higher the level of asset specificity in the IOR, the more likely the firm entering the IOR to choose a complex contract (Reuer & Ariño, 2007). The TCE treats each transaction as a discrete independent event and perceives the alliances taking place in an ahistorical context. Disregarding the notion that the occurrence of alliance is independent of the social relationship between the parties involved is the major criticism of the TCE.

Although a contractual agreement between the buyer and supplier is drafted at the time of structuring an alliance, repeated alliances with the same party enhance trust. Trust between two parties acts as a self-governing mechanism and imposes awareness on both parties that each of them has much to lose should they behave opportunistically. The implication of structural embeddedness suggests the importance of a social network where both economic transactions and economic relationships exist. Trust between two firms can alter the choice of contracts and determine the complexity of the formal contract. A detailed or complex contract is used as a governing mechanism in anticipation of opportunistic behavior. However, as the number of economic transactions increases the buyer and supplier will likely develop a social relationship. The trust generated from such a social relationship makes a detailed contract quite redundant because trust arising from reputational concerns acts as a self-governing mechanism. A concurrent alliance relationship with the same partner may operate as a self-enforcing mechanism that can discourage non-cooperative behavior because such behavior can affect the prospect of an alliance (Ryall & Sampson, 2003).

3.2.3 The Dynamic Evolution of the Exchange Relationship between Buyers and Suppliers

Both exogenous and endogenous factors can influence the buyer and supplier to advance from the arm's length buy-sell contract to socially embedded ties (figure 4). Exogenous factors include resource dependency, and endogenous factors involve inter-organizational embeddedness, where firms derive information from the existing network to address potential hazards (Gulati & Gargiulo, 1999). In other words,

interdependency alone does not suffice for organizations to progress or evolve to network ties, but they do rely on information gathered from prior ties with the same partner to determine with whom to build an alliance. Construction is a competitive industry, and it is the lowest bidder that earns the contract. Based on this conjecture, it is possible to surmise that price plays the determining role, and the exchange does not go beyond the arm's length buy-sell contract. However, because there exists no perfect market, interdependencies and inter-organizational embeddedness can have a major influence in the evolution of the simple arm's length contract to socially embedded ties between contractors and a material supplier.

Exogenous and endogenous factors:

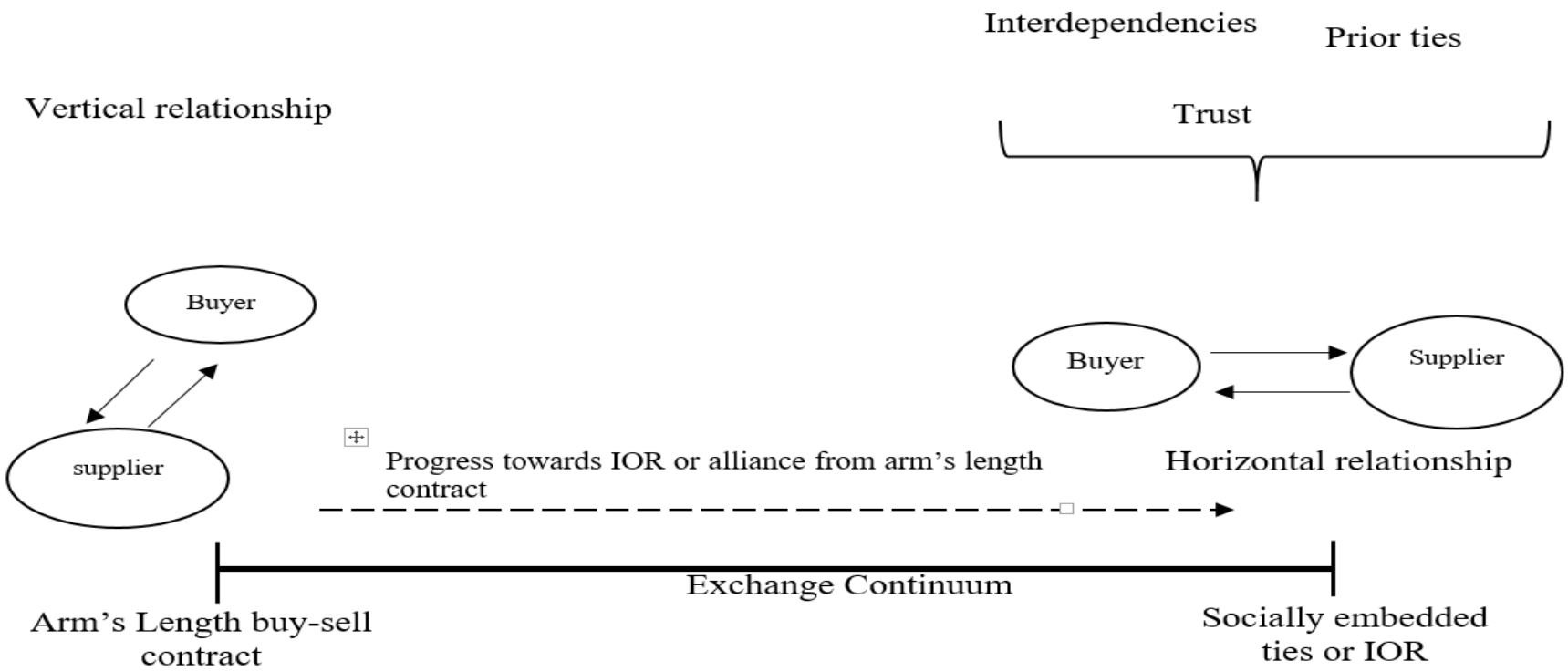

Figure 3.3 Progress from Market Organizational Form to Network or Hybrid Organizational Form

Note: Author's own elaboration

Although a contractor can conduct transactions with multiple suppliers, there will always be a particular supplier whom a contractor prefers to have an alliance (exchange relationship) with. A contractual agreement is drafted depending on the interdependency and level of asset specificity. As the number of transactions increases, a contractual agreement, as an initial condition, can act as a driving force to develop an exchange relationship between a contractor and supplier. A formal contract ensures that the partner conducts its business in the way it is expected by the other partner. As each partner learns what is expected in an alliance in the due course of time, a formal contract soon becomes merely a formality. The coordination between partners, and the alignment to achieve a common goal, is now governed by trust. The presence of trust between firms facilitates efficiency in the exchange relationship when partners are vulnerable to opportunistic behavior and uncertainty (Lyons & Mehta, 1997). Trust is one of the significant determinants of the positive outcome of network management (Ysa, Sierra, & Esteve, 2014).

In describing the dynamic evolution of the exchange relationship between firms, Larson (1992) proposed the process model of network formation that accentuated the significance of reputation, trust, reciprocity, and mutual interdependence. The proposed framework from inductive analysis described the development of network formation between firms in three phases (figure 5). The first phase introduced the significance of personal reputation prior relationship, and economic aspects that were preconditions for exchange. The second phase highlighted the development of trust during the trial period. Finally, the third phase explained three kinds of integration that occurred when the relationship between buyers and suppliers solidified after completing the first two phases. The three kinds of integration were operational integration, strategic integration, and social control.

1) Phase I: Preconditions for exchange

Economic gain, such as the partner's skill and capabilities, is not merely the determining factor that leads firms to ally. Social aspects that are inclusive of personal reputation, prior relations, and the firm's reputation are equally important factors that influence firms in forming a network dyad.

Although the economic aspect plays a significant role, the history of a successful alliance between firms can shape subsequent ties. Often the study of

economic exchange overlooks the social context that facilitates the domain or platform where economic exchange can be initiated. The accumulated interactions and exchanges between parties can build trust, thus reducing transactional risks. Firms are less likely to rely on elaborative safeguards for specifying, monitoring, and enforcing agreements under high trust conditions (Zaheer, McEvily, & Perrone, 1998). A solid interpersonal relationship on both individual and organizational levels provides a conducive environment for future economic exchange. Firms are more comfortable having an economic relationship with suppliers with whom they have intensive prior ties.

Apart from the social aspect which mainly concerns knowing people, the economic aspect, such as knowing their capabilities, equally plays a predominant role in selecting partners. Firms are more inclined to those suppliers whose capabilities are already familiar to them. Hence, once the economic exchange develops over time, it results in economic trust, and soon social and economic aspects become difficult to extricate.

A firm's reputation is not built overnight. It takes several successful transactions with the same partner to develop a concrete reputation. Hence, the reputation of the firm is the conducive factor for a decision to enter into tight alliances. Larson (1992) identified that reputation effects were primarily significant for entrepreneurial firms. As their company's reputation was not well established, the alliances were initiated based on reputation at the individual level. Further, firms sought alliances with a strong reputed industry, because a partnership with such an industry provides them with a better

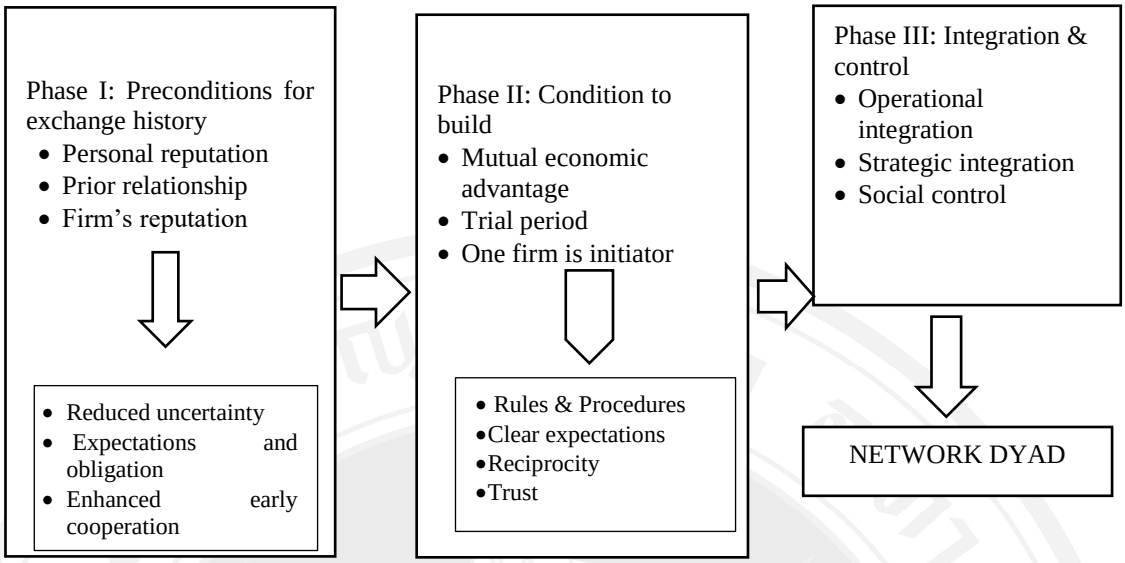

Figure 3.4 Progress Model of The Formation of Entrepreneurial Dyads Product and Other Benefits, and Will Enhance their Reputation.

2) Phase II: Condition to build

After completion of phase I, the alliance between firms proceeds to phase II where the building process of the alliance between organizations relies heavily on trust and the development of reciprocity norms during a trial period.

According to Larson (1992), although mutual economic advantages, such as procurement of resources, and financial advantage on both sides were undeniably necessary but not sufficient conditions. Indeed, firms relied heavily on interpersonal relationships that gradually developed after several day-to-day exchanges. Firms went through a trial period before full-fledged alliances between buyer and supplier were developed.

A formal contract is prepared before conducting any exchange of goods and services between buyer and supplier. Although in some countries formal agreement is less likely to be enforced at the time of a dispute, it is still preferred as a formality in anticipation of opportunistic behavior, and as a benchmark to delineate the roles and obligations of both parties involved and to clarify payment methods and delivery in advance (Duan, 2012). The incremental adaptation of a formal contract brings parties closer, and gradually a formal contract becomes less important; and when the alliance is finally formed parties are governed by relational norms and reciprocity.

In the trial period, a formal contract is often preferred to set expectations that include both explicit and implicit rules that parties in the agreement must follow. The steady exchange of information provides a favorable environment to routinize communication and to agree on procedures for coordinating activities.

For developing an exchange relationship, at least one party must act as an initiator to manifest the willingness to rely more on the relationship than on the formal contract. The initiator takes one step further to make an economic exchange more favorable by routinely communicating to the other party regarding their needs and the specification of products. The initiator can also arrange a better method of payment before another party makes a recommendation. Hence, such willingness to create a new relationship can bring positiveness in building alliances.

3) Phase III: Integration and control

Larson (1992) identified three kinds of integration and control that can occur between partners. These three kinds of integration can only occur when the relationship is solidified. In other words, after the successful completion of the trial period, the partners can have operational integration, strategic integration, and social control.

Operational integration can be achieved through dense communication and an administrative system. The third phase is distinguishable from the prior phase as both firms are more comfortable communicating with each other. Individuals from both firms can have their own set of contacts at different steps of the corporate ladder. When such a phenomenon occurs operational integration between the buyer firm and seller firm is established.

Strategic integration occurs when the buyer and seller proceed to a new joint project from routine administrative coordination to develop new products or to improve an old one. The buyer and seller firm can together participate in a project to develop new products or a system that can enhance existing products that the buying company is selling. There are many examples of how Japanese automakers in coordination with their supplier have been able to enhance their existing product. Often a representative from Toyota would visit the supplier firms to guide and assist with their manufacturing system.

Under social control, moral obligation and trust, and reputation and identity as control were identified as controlling mechanisms by Larson (1992). Trust is often used as a self-governing mechanism to control opportunistic behavior. Increasing trust between partners can ease communication (Garbade, Omta, & Fortuin, 2016), resulting in positive network outcomes (Ysa, Sierra, & Esteve, 2014). Besides trust, when an alliance between firms matures, the identities of both individuals and organizations become significant. The firms proceed with the preservation of their reputation by avoiding opportunistic behavior or any actions that would jeopardize relational rent. Hence this final phase of the alliance between buyer and supplier is achieved when all of the conditions in the preceding phases are met.

3.2.4 The Performance of Alliances

One of the major issues in the study of the IOR is measuring alliance performances. The question is what the factors or antecedent conditions are that determine or influence alliance performance or measure the alliance performance itself. Past studies have either relied on objective measures or subjective measures in measuring alliance performance. Objective measures, in general, include financial outcomes such as profit and loss, increase in sales, cash balances, total assets (both tangible and intangible), and shareholder's equity capital from financial statements officially published by firms and organizations. These objective measures, although logical and conventional, may not be appropriate to benchmark the quality of an alliance, given the multifaced objectives of alliances. The success of an alliance does not appear overnight, and even with a positive financial statement, the alliance partners may have varying opinions regarding the success of the alliance. Subjective measures, on the other hand, include new product development, the customer's satisfaction, the partner's satisfaction, knowledge transfer effectiveness, and innovation.

Lakpetch and Lorsuwannarat (2012) used both objective and subjective measures to determine the effectiveness of knowledge transfer in university-industry alliances. The objective measures used were tangible research outcomes such as patents, licenses, rewards, and publications. Subjective measures included development through tacit knowledge transfer, commercialization through technology transfer activity, and efficient coordination. Further, Ysa, Sierra and Esteve (2014), relied

merely on subjective measures to determine network outcomes. They included innovative ideas, the integration of various aspects of problems, and shareholder's contributions to measure content outcomes; the satisfactory resolution of conflicts and differences, and the shareholder's different perspectives on problem-solving were used to determine process outcomes. Also, Ferguson, Paulin and Bergeron (2005) relied on subjective measures to determine the performance of inter-firm service exchanges. Garbade, Omta and Fortuin (2016) were explicit regarding alliance outcomes and alliance satisfaction as subjective measures to determine alliance performance.

In measuring the exchange relationship between buyer and supplier, past studies have relied on subjective measures from the buyer's perspective. This is because in the industry that they were investigating, product and organizational architectures are largely defined by buyers. Cabigiosu and Camuffo (2012), while evaluating supply relationship performance, rely on subjective measures. The indicators were components designed and produced by the suppliers, the time and cost incurred in the development and design by the supplier, process, and technology used by the supplier as compared to competitors, quality of components supplied by the supplier, quality of services provided by the supplier, price of components supplied by the supplier, and flexibility of the supplier. Likewise, Sa Vinhas, Heide and Jap (2012), while evaluating the buyer's satisfaction with the supplier, relied on subjective measures such as the satisfaction of the reseller with the supplier, the level of economic payoff, the reseller's dependence on the supplier, the reseller's perception of the supplier's dependence, the reseller's perception of the supplier's fairness, and the degree of the formalization of the relationship between supplier and reseller.

Moving on from measuring alliance performance itself, another issue is the antecedent conditions for alliance success. Several past studies have sought to identify the factors influencing alliance success. These factors include management flexibility in the alliance, trust between partners in the alliance, types of governance structure in the alliance, degree of information exchange between partners in the alliance, constructive management of conflicts, the role of boundary spanner, the partners' capabilities, and so on. Gulati (1998) emphasized the importance of embedded ties in the performance of the alliance. The robustness of the social network that the firm has with its significant other can build trust, which is an antecedent condition for superior

objective alignment. Additionally, the continuity of exchange of information or regular interaction with the partners in the alliance is a significant factor for conflict resolution. Trust among partners not only enables a greater exchange of information resulting in easing the interaction (Garbade, Omta, & Fortuin, 2016) but also promotes awareness to avoid opportunistic behavior. From an inter-firm alliance governance perspective, it has been suggested that formal contracts, as a governance mechanism, are positively associated with alliance success provided that the alliance is property-based (Hoetker & Mellewigt, 2009). Although formal governance is useful in anticipation of opportunistic behavior from the partners, it can also have a negative influence, as too much control can demotivate partners in the alliance. While studying the role of boundary spanners in commercial banks in three different countries, Ferguson, Paulin and Bergeron (2005) argued that greater implementation of contractual governance can result in lower exchange performance. On the other hand, relational governance, which emphasizes trust, and frequency of interaction between partners as an alternative mode of governance, can result in higher alliance performance. As a relationship intensifies, partners become more comfortable, thus creating a favorable environment in which to develop trust. Once trust is developed it creates more room to resolve conflicts verbally rather than introducing third-party arbitration (Duan, 2012). Some alliances rely more on relational governance than formal governance as the efficacy of relational-based governance is high under the high pressure of environmental turbulence. Under high environmental turbulence, relational-based governance was found to be positively correlated with alliance performance (Lee & Cavusgil, 2006). Other determining factors that influence the choice of relational-based governance over contractual governance are the history of a successful alliance, environmental uncertainty, risks, interdependency, culture, and power and trust (Bonatto, de Resende, & Pontes, 2020).

Scholars have argued that both formal contracts and relational governance complement each other rather than substitute one another. Poppo and Zenger (2002), identified in anticipation of exchange hazard alliances relied on both contractual and relational governance, and a higher level of relational governance reduced contractual complexity. Likewise, Garbade, Omta and Fortuin (2016) identified the essential role of structural governance in creating trust, and the role of both structural governance and relational governance in the efficient exchange of resources and knowledge creation in

the strategic alliance. However, in the context of the cross-border inter-firm alliance, the choice of a governance mechanism (relational and formal governance) can be both substitutional and complementary (Abdi & Aulakh, 2017). Under higher behavioral uncertainty, firms in an alliance were seen to be more likely to opt for relational governance, whereas with those under higher environmental uncertainty more formal contracting was preferred.

3.3 Three Generic Forms of Governance

Williamson (1991) distinguished three generic forms of governance—market, hybrid, and hierarchy—by combining institutional economics with aspects of contract law and organization theory. In other words, three generic forms were differentiated in terms of contractual laws that supported them, different coordinating and control mechanisms, and their different abilities to cope with disturbance or uncertainty (table 1). This section briefly describes three generic forms of governance to provide a better understanding of the difference between the arm's length contract and embedded ties between the buyer and supplier.

3.3.1 Market

Under this form of governance, individual buyers and sellers bear no dependency relation to each other. Price plays a determining role, and both parties enjoy full autonomy to switch their partner should they find another party with a better deal. No embedded ties exist between parties, and neither party has any urgency to rely on a less formal contract. The general example of such a type of governance is the arm's length contract.

The contractual law that supports the market form of governance is classical contract law. This type of contractual law is applied to ideal transactions in law and economics. Therefore, under the market form of governance, a clear agreement is drawn in advance of the beginning of any transaction between parties. The relationship between parties is solely determined by price and performance. It assumes that a contract is renewed period by period not because there exist informal ties between parties, but because the current supplier continuously meets all of the expectations of

the buyer in terms of price, quality, and quantity. Transactions are strictly monetized to an extreme degree, and contract law is interpreted in a very legalistic way. In other words, as contractual obligation supersedes informality, disputes arising out of the failure to meet terms and conditions, are settled in court. Written agreements are strictly preferred over oral amendments, and transactions are characterized by hard bargaining i.e., price plays a decisive role.

Williamson (1991), in differentiating three generic forms of governance, described two types of adaptability as the central problem of economic organization. Firms and organizations need to adapt to many changes that may affect their performance. Therefore, when firms adapt to changes regarding the demand or supply of a commodity by making changes in the price, such adaptability to take the right action is called adaptation (A). Here "A" denotes autonomy, where the parties in the transaction respond independently to parametric price changes to increase their profit. When parties enter a bilateral agreement, and dependency transcends the arm's length contract to the long-term relation; firms and organizations must compromise their autonomy to a certain degree. Such action by parties in response to bilateral dependency is called adaptation (C). Here "C" denotes cooperation.

In terms of adaptation (A), the market is preferred as under this form of governance partiers in the contract enjoy full autonomy should there be any disturbance arising out of changes in demand and supply. Suppose the parties in the contract are exposed to sudden changes in the demand and supply of goods and services, price serves as a sufficient statistic. In other words, as changes in the demand and supply of goods and services are reflected in price, individual buyers and suppliers can freely rely on price to reposition their relations.

The market is characterized by strong incentive intensity, and incentive intensity is the extent to which the economic gain from the trade flows directly to parties in a transaction. Under this mode parties here are described as autonomous traders; hence they maintain full autonomy to have a claim on every gain they make in a trade. Also, each party in a transaction, should they feel they were…

Table 3.1 Three Generic Form of Governance Based on Comparative Analysis by Williamson (1991) Combining Institutional Economics with the Aspect of Contract Law and Organization Theory

General Chara**cteristics**	**Three Modes of Governance Structure**		
	Market	**Hybrid**	**Hierarchy**
Contractual law	This mode is supported by classical contract law.	Neo classical contract law and excuse doctrine support this mode of governance	This mode is supported by forbearance contract law
Incentive intensity	High-powered incentive as gains or loss from transactions directly flows to the parties transacting; individual parties have no legal claims or are held accountable for gains and losses made respectively.	Semi-strong incentive, as parties in a transaction are bilaterally dependent. Hence economic gains and losses from transactions are shared between parties in the exchange relationship.	Zero incentive, as economic gain from transaction gets assimilated or accumulated to the organization's annual revenue and is reflected in profit and loss. Parties responsible for such gains and losses have no claims or are held accountable.
Administrative control	Zero administrative control as parties in a transaction are independent or autonomous traders	Semi-strong administrative control. Although parties are bilaterally dependent and have some degree of autonomy.	Strong administrative control through managerial hierarchy. Introduces complex accounting system for efficient coordination.
Adaptation (A)	High adaptation to autonomy, as parties in a transaction maintains an arm's length relationship.	Semi-adaptation to autonomy, as parties to a contract can take legal action should gain from litigation exceed value in the continuing relationship	Zero adaptation to autonomy, as parties transacting are within the organization under strong administrative control through the exercise of fiat.

General Chara**cteristics**	**Three Modes of Governance Structure**		
	Market	**Hybrid**	**Hierarchy**
Adaptation (C)	Negligible adaptation to cooperation, as parties in a transaction are autonomous trader.	Semi-adaptation to cooperation, as parties are bilaterally dependent, but such adaptation to cooperation comes with a cost.	Strong adaptation to cooperation. Takes lesser resources and time as it requires less amount of documentation to arrange coordination within the organization.
Level of asset specificity	Negligible level of asset specificity as transaction costs involved are high between parties in a transaction.	This mode supports semi-level of asset specificity as parties are bilaterally dependent. As the level of asset specificity deepens the transaction cost involved increases significantly.	This mode supports a high level of asset specificity as purchase is made internally within organization and transaction cost involved is reduced significantly due to strong adaptation to cooperation.
Dispute settlement	Disputes are settled in a court.	Third party arbitration is preferred rather than court settlement.	All disputes related to differences are communicated to the superior within organization.
Governing instrument	Formal contract (“sharp in by clear agreement: sharp out by clear performance”)	Formal contract or equity as mutual hostage. However, the contract between party is assumed to be incomplete.	Fiat i.e., exercise of authority, serves as governing instrument.

unfairly treated, cannot have legal gain, or are even held responsible for the losses once the trade has been finalized.

According to Williamson (1991), asset specificity refers to the extent to which the asset in hand can be reassigned or redeployed to alternative uses by alternative users without sacrificing the productive value. Six kinds of asset-specificity distinctions have been identified: 1) site specificity; 2) physical asset specificity; 3) human asset specificity; 4) brand name capital; 5) dedicated asset; and 6) temporal specificity. The level of asset specificity increases transaction costs, and transaction costs here refer to costs arising from contractual hazards, costs incurred in drafting formal contracts, and other bureaucratic costs. Costs arising from production or asset specialization are not included in the analysis.

The autonomous feature of market mode hinders adaptation (C). The parties in a transaction enjoy a high degree of autonomy, liberating them from obligated administrative control, interaction, and communication that are required when asset specificity deepens. This lack of dependency between parties in a transaction increases governance costs significantly. According to Williamson (1991), governance costs are a class of transaction costs that are related to a) the costs of drafting, negotiating, and safeguarding an agreement between two or more parties in a transaction; and b) the ex-post costs of contracting, generated by maladaptation, haggling, administration, and bonding. Hence, this mode of governance is least preferred because the identity of partners matters as an investment in transaction-specific assets increases.

In summary, the classical contact that is strictly applied to ideal transactions in law and economics characterizes the market mode as a strong incentive intensity, where parties in a transaction are autonomous traders, have zero adaptation to cooperate, and have negligible administrative control. Hence this mode is merely supportive when the level of asset specificity is negligible. Once the intensity of transaction-specific assets increases, this mode becomes less flexible, resulting in a dramatic increase in governance costs.

3.3.2 Hybrid

This mode of governance is described as neither market nor hierarchy. In the market-to-hierarchy continuum, the hybrid falls somewhere in between. Under the

hybrid parties to a contract do not enjoy full autonomy as they do under the market. Price does not serve as a sufficient statistic to take the right action should there be any changes in the demand and supply of a commodity. Individual buyers and suppliers can switch partners but with higher costs. Disputes are settled by arranging in-person, face-to-face meetings with the presence of third-party arbitrators although this is not compulsory, rather and court settlement. Although a formal contract is drawn between parties, such a contract is assumed to be incomplete. Some examples of the hybrid form of governance are franchising, joint R&D, joint ventures, long-term exchange relationships, and all kinds of IORs.

This mode of governance is supported by neoclassical contract law and excuse doctrine. The law assumes that since parties are bilaterally dependent to a non-trivial degree, the parties are relieved from strict law enforcement. The parties under the hybrid mode also enjoy semi-autonomy. As already stated above, as the formal contract is assumed to be incomplete, the long-term contract is supported by additional safeguards. Disputes arising from opportunistic behavior are settled by either introducing a third-party arbitrator or among the partners themselves. This law also assumes that the identities and the reputation of parties to a contract also matter before entering a bilateral agreement.

In terms of adaptation (A), the hybrid may not be as effective as the market form of governance. This is because neoclassical contract law and the excuse doctrine assume that the parties in a transaction are bilaterally dependent and lack complete autonomy. Once the party enters into a bilateral agreement, price no longer serves as a sufficient statistic. The parties to a contract are deprived of bargaining power related to price and complete autonomy. A new kind of relationship is formed, far different from the market mode of governance. Apart from the formal agreement, trust, social reciprocity, communication and interactions and social norms serve as determining factors. Therefore, this mode of governance is comparatively better suited for adaptation (C) than a market mode of governance. However, such adaptation comes with a cost. As the formal agreement drawn between the parties is incomplete, to fill the gap such contracts need to be supported by added contractual safeguards and administrative apparatus such as information disclosure and, dispute-settlement machinery.

In terms of asset specificity, the question is how hybrid works as compared to the market mode of governance. As the hybrid falls somewhere between market and hierarchy, this mode of governance shares the features of both the market and hierarchy to some degree. When the level of asset specificity deepens from a negligible point, the hybrid mode serves better adaptability in terms of governance costs as compared to the market mode. This is because, under the hybrid mode, the parties in a transaction are bilaterally dependent and this dependency facilitates better cooperation. The governance cost involved as the asset specificity deepens is significantly reduced once bilateral dependency sets in. The neoclassical contractual law and excuse doctrine allow allying partners to settle disputes with recourse to third parties, reducing governance costs, as compared to legal litigation. In Williamsons' (1991) parlance, preexisting trust can determine choice governance and can enhance exchange performance by allowing the use of less formal governance. However, should there be any disputes between parties arising out of dissatisfaction caused by opportunistic behavior from either one of the parties due to their semi-autonomous status, the parties can have an incentive to take the matter to court should the gain obtained from legal action exceed the value of continuing the exchange relationship.

Another reason why the hybrid mode is termed neither market nor hierarchy is because the hybrid mode sacrifices full autonomy in favor of cooperation as compared to the market mode and sacrifices full cooperativeness for incentive. Additionally, in terms of asset specificity, when transaction-specific assets are between negligible and high, the hybrid mode of governance serves better in all attributes.

In summary, as the hybrid mode is located between two opposites— market and hierarchy—it displays moderation in all five attribute respects. In terms of contract law, the hybrid mode is less strong than the market mode but has more efficacy than the hierarchy mode of governance. In adaptation (A), where "A" denotes autonomy, the hybrid mode although it serves a moderate or a semi-degree of autonomy, the parties to a contract can have moderate autonomy as compared to the hierarchy mode. Adaptation (C), where "C" denotes cooperation, the hybrid mode is better suited than the market mode but has less coordination capability as compared to the hierarchy mode. The hybrid mode displays semi-strong administrative control as compared to the market mode, but less degree of control as compared to the hierarchy mode. In terms of

autonomy, as price does not serve as a sufficient statistic, the parties to a contract have less bargaining power as compared to the market mode. The hybrid mode is also characterized by semi-strong incentive intensity. Unlike the market mode where economic gain or losses flow directly to the parties transacting, under the hybrid mode parties to a transaction have legal rights to the gains made from economic transactions, and the parties are also held accountable for losses.

3.3.3 Hierarchy

To the other end of the polar is a hierarchy. This mode of governance is characterized by what is the opposite of the market. Where the market is characterized by trade between autonomous individual buyer and seller firms, the hierarchy is within one single firm. It is also described as an internal organization, where the employer has authority over the employee. Whereas under the market mode, price serves as a sufficient statistic and is characterized by strong incentive intensity, under the hierarchy mode fiat serves as a governing mechanism to have full administrative control, and the parties under are not entitled to any incentive gained from trade. Disputes under the hierarchy mode are settled internally within the organization, rather than in the court.

This mode of governance is supported by forbearance contractual law. The underlying rationale behind forbearance contractual law is twofold: first, parties to an internal dispute are well aware that the circumstances surrounding a dispute and the efficacy of alternative solutions can be communicated to the court merely at greater costs, and second, allowing parties to settle their dispute in court would undermine the efficacy and integrity of the hierarchy. Hence, under the hierarchy mode, the parties in an organization can settle their differences either by themselves or by communicating to their superior for a decision. However, this forbearance doctrine that supports the hierarchy mode impinges parties to an internal exchange to seek alternatives other than settling the matter internally. Unlike the market mode, parties in an organization are deprived of the privilege to seek legal action. Not all disputes or differences are settled within the organization. Issues of worker safety, dignity, and issues that pose societal spillover are generally communicated to the court. The court cannot deny appeals related to such issues, lest violation of provisions related to human and worker rights ensues.

In terms of autonomy (A), neither the hierarchy nor the hybrid mode can come close to the market mode. Due to the price which serves as a sufficient statistic, individual buyers and suppliers have complete autonomy to switch contracting partners without much difficulty. Further, the high-powered incentive provided by market transactions, in which efficiency gain flows directly to the parties transacting, deprives autonomous traders (buyers and suppliers) of having legitimate claims to the gains made by the other party in the transaction or they can be held accountable for the losses incurred. However, in terms of adaptation (C), the hierarchy has advantages over both hybrid and market modes. This is because under the hierarchy mode coordination between parties is ensured by the use of fiat. Hence, adaptation to uncertainty or disturbances under the hierarchy mode (within firms) is less costly due to 5 reasons: 1) It takes less documentation to arrange coordination within the organization; 2) resolving differences and disputes between parties by fiat rather than arbitration saves resources and facilitates efficient coordination; 3) as information "floats" within the organization, it can be more easily accessed and accurately assessed; 4) the informal organization, which is the essence of the organizational culture, supports internal dispute resolution; and 5) the essence of the internal organization such as career rewards, job promotion, training, coaching, and joint profit sharing promotes team orientation.

Asset specificity is the extent to which an asset purchased for a specific purpose can be readily adapted or used for another purpose. For example, machinery purchased for a specific purpose can have high specificity and is useful only for a certain job or in certain circumstances. With asset specificity comes transaction costs, and the transaction costs resulting from contractual hazards can significantly affect firms under all modes of governance. The market mode is preferred if the level of asset specificity is negligible; the parties in a transaction are autonomous traders and can defect at a negligible cost. However, as the level of asset specificity deepens, the market mode is less preferred, and parties are more likely to advance to the hybrid mode of governance. This mode of governance is characterized by semi-strong incentives and since parties in a transaction are bilaterally dependent, they can afford a moderated level of coordination, reducing the transaction costs involved in asset specificity. However, as the level of asset specificity deepens, governance costs related to asset specificity can increase significantly under the hybrid mode.

The hierarchy mode is a marvel in terms of asset specificity. The transaction cost involved in high-level asset specificity is compromised significantly. This is because this mode is characterized by strong adaptation (C), where “C” denotes cooperation. The coordination between parties is arranged through the exercise of fiat, reducing the governance cost involved. Disputes resulting from differences are settled internally; hence another cost resulting from litigation is avoided. The accessibility and accurate assessment of information are easily achieved under this mode, supporting a high level of asset specificity. Contrary to the above argument, concerning the transaction cost arising out of asset specificity, Gulati and Nickerson (2008) argued that preexisting trust between parties can reduce governance costs significantly in all three modes of governance: market, hybrid, and hierarchy.

In summary, the other end of the polar or opposite of the market is a hierarchy. Hence, this mode is characterized by a zero level of autonomy, displays strong cooperation between parties through the exercise of fiat, supports the highest level of asset specificity as compared to the two preceding modes of governance, displays zero incentive intensity, supports high accessibility and accurate assessment of information, and favors the internal settlement of disputes rather than court settlement or involvement of a third arbitrator.

3.4 The Arm’s Length Buy-Sell Contract Vs. Embedded Ties: A Comparison

This section compares the arm’s length buy-sell contract with a long-term exchange relationship (embedded ties) based on the attributes of the market and hybrid developed by Williamson (1991), the embedded ties discovered by Uzzi (1997), and the network discussed by Powell (2012). The table below displays a comparative analysis between the arm’s length buy-sell contract and embedded ties.

Table 3.2 Difference between Arm's-Length and Embedded Ties

	Arm's Length Buy-Sell Contract	**Exchange Relationship (Embedded Ties)**
1	Parties in a transaction strictly follow classical contractual law applied to ideal transactions in law and economics.	The transaction between bilaterally dependent parties is supported by neoclassical contractual law and excuse doctrine.
2	Described as a "thick" market, as there exists no dependency relations between the buyer and seller. Price serves as a sufficient statistic.	Although the parties to the transaction maintain autonomy to some degree, they are bilaterally dependent.
3	Identity does not matter because the parties to the transaction have full autonomy to go their way with trivial financial obligations.	Identity matters because premature termination of the relationship or persistent malfeasant behavior can bring severe repercussions to both parties.
4	This is characterized by strong incentive intensity. The parties to the transaction are entitled to all of the economic gains and are also not held responsible for losses from the transaction.	This is characterized by semi-strong incentive intensity. The economic gains from the transaction are shared between parties on a pro-rated basis or as per the contractual agreement. Also, both parties are held responsible for the losses.
5	All disputes are settled in court.	Disputes between parties to the transaction, rather than the court, are settled by introducing a third-party arbitrator.
6	As parties to the transaction maintain complete autonomy, no administrative control exists between the buyer and seller.	The extent of administrative control between the buyers and sellers depends on the extent to which they are bilaterally dependent on each other and the degree of the transaction-specific asset.
7	The contract law between parties is interpreted in a strong legalistic way.	Since contract law that supports the parties is interpreted in a semi-legal way, the formal contractual agreement is assumed to be incomplete.
8	The governance cost arising out of the level of asset specificity is anticipated to be high as the contract law regime is interpreted in a non-elastic way.	The governance cost arising out of the level of asset specificity is moderated by developing bilateral dependency between parties. However, as the formal agreement drawn is incomplete added safeguard mechanisms increase bureaucratic costs.
9	Price serves as a sufficient statistic, and the relationship between the	The relationship between the individual buyer and seller is described as a "thick

	Arm's Length Buy-Sell Contract	Exchange Relationship (Embedded Ties)
	individual buyer and seller is described as a thin economic relationship.	relationship," hence price is not the only determining factor. Other factors such as reciprocity, trust, and social norms matter. Some examples include alliance between the buyer and seller, strategic alliance between two firms, and joint ventures.
10	Parties in a transaction are assumed to be rational in decision-making.	The parties in a transaction are assumed to be rationally bound.
11	The formal contract is the only governing mechanism.	As the contractual agreement drawn is assumed to be complete, other relational factors, such as trust and reciprocity, serve as a governing mechanism.

3.5 Theoretical Framework

So far various types of inter-organizational relationships, and their attributes and issues related to their study, have been discussed in the preceding section. To provide a better understanding of the differentiating exchange relationship or embedded ties from the arm's length contract, three generic forms of governance structure were briefly discussed. Now this entire section is devoted to developing a theoretical base in conjunction with different aspects of theories and their relationship with embedded ties. Although, this section does not entirely review all organization theories and alliances; rather, it briefly presents how different governance structures, and their interplay are influential in the exchange relationship. Thus, this section provides a holistic view of three predominant theoretical foundations of alliances. The emphasis is on surmising the interdependency of transaction cost economy (TCE), resources dependency theory (RDT), and social embedded theory (SET).

3.5.1 Transaction Cost Economy (TCE)

Organizational economics, a branch of applied economics that studies the transactions occurring between individual firms, has several different streams of economic thoughts. Transaction cost economy is one of them. In general, it refers to the expenses incurred for drafting and enforcing a contract, for disputes and bargaining over terms and contingent claims, and for deviating from obligations to the specific

investment. Overall, it is the cost of running the economic system of a firm without any friction.

According to Williamson (1979), TCE is understood as an alternative mode of organizing transactions in such a way that it minimizes the transaction costs arising out of contractual hazards. The choice of governance modes—markets, hybrid, and hierarchy—by firms mostly depends on the extent of the transaction costs arising due to the degree of transaction-specific assets involved and the level of anticipated uncertainty (Williamson, 1991). He further argued that such costs are to be distinguished from production costs and that a firm can decide what sort of governance structure best suits it by comparing transaction costs with production costs. Therefore, in comparison to other approaches of economic organization, the transaction cost economy (a) is more microanalytic, i.e., the unit of analysis is the transaction cost, (b) assumes that humans are rationally bounded and can manifest opportunistic behavior, (c) gives more economic significance to transaction-specific assets, (d) depends more on comparative institutional analysis, (e) perceives business firms and organizations as a governance structure rather than a manufacturing unit, and (f) gives greater emphasis to the ex-post institution of a contract, with priority on private settlement rather than court settlement.

The predominant characteristic of the transaction cost economy is that it assumes humans as rationally bounded and opportunistic, as indicated above. The first concerns limits on the cognitive competence of individuals. The second acknowledges humans as being self-interest-seeking and as having guile. A cognitive assumption, the so-called bounded rationality on which TCE relies, maintains that economic actors are assumed to be intentionally rational but have limited cognitive ability. TCE admits that humans are economic persons and are goal-oriented in their decision-making process; however, due to their cognitive limitations, they are unable to realize their goals. Therefore, TCE admits both parts of the definition. Bounded rationality can take two forms. The first is concerned with the decision process, and the second involves the governance structure. It is assumed that due to limited cognitive ability, the decision-making process is generally heuristically based. This means that individuals generally rely on short-cut methods to produce solutions. Rather than the decision process form of bounded rationality, TCE predominantly concerns the governance structure form.

Although in anticipation of the contractual hazard, the parties in a transaction consider the cost of planning, adapting, and monitoring transactions, due to their cognitive limitations the formal contract is assumed to be incomplete. As the formal document drawn between parties is incomplete, the gap is to be filled by the parties as contingencies arise (Williamson, 1991). However, such safeguards come with a cost. Scholars have contended that if the parties in an alliance of exchange relationship trust each other, such a cost can be significantly reduced. The partners in a transaction, under the hybrid mode of governance, are less likely to rely on formal contracting (Gulati & Nickerson, 2008).

Oliver (1985) described opportunism as self-interest-seeking with guile. This includes blatant forms of behavior such as lying, stealing, and cheating. Opportunism is inclusive of subtle forms of deceit, where the partners in a transaction in pursuit of extra benefits may perform a deceptive act by concealing or misrepresenting the truth. Both active and passive forms and both ex-ante and ex-post types are inclusive of opportunism under TCE. In other words, opportunism refers to a partial, asymmetrical, or distorted manifestation of information by an individual especially to mislead, distort, disguise, obfuscate, or otherwise confuse another individual in a relationship. The exchange relationship, or contract between parties is not deprived of perceived opportunistic behavior unless the parties in the alliance or exchange relationship have a series of successful past alliances. The extent to which the level of transaction-specific assets is involved in a contract or exchange relationship can significantly increase the extent of perceived opportunistic behavior. Hence, the parties to a contract rely on complex formal contracting to circumvent contractual hazards. The choice of the governance mode—market, hybrid, or hierarchy— by a firm also depends on the degree of perceived opportunistic behavior. Firms are more likely to choose a hierarchy mode of governance if the level of perceived opportunistic behavior is to the highest extent. If there is trust between firms due to the historical success of the alliance, then the hybrid is preferred.

Transaction cost economy is further classified into two types: ex-ante cost and ex-post costs. Ex-ante costs refer to the reasonable estimate of costs before they are incurred. From the perspective of the transaction cost economy, these are the costs incurred in drafting, negotiating, and safeguarding an agreement. A great amount of

care is taken while drafting a contract, all contingencies related to uncertainty and asset specificity are recognized, and appropriate adaptations in terms of achieving common goals are well specified and agreed on in advance. In general, under the market form of governance, when an individual buyer and supplier enter into a contract, the transaction cost is assumed to be higher. This is because due to a lack of proper identification of partners, anticipated uncertainty such as the contractual hazards arising out of opportunistic behavior is assumed to be higher. However, if the buyers and suppliers in the exchange relationship have a history of successful transactions, then they are less likely to rely on a formal contract. This reduces transaction costs significantly. Another reason why embedded ties such as joint ventures, buyer and supplier alliances, and the franchise are preferred over the arm's length contract when the level of asset specificity and uncertainty deepens because TCE assumes that humans are rationally bounded; hence the contractual agreement is also assumed to be incomplete, and the gaps are filled by the parties to the agreement as contingencies arise. Such gaps under embedded ties are assumed to be filled as parties to the transaction are more likely to trust each other when behavior uncertainty is anticipated (Krishnan, Martin, & Noorderhaven, 2006).

Whereas ex-ante costs refer to the costs incurred before the occurrence of an event, ex-post costs are those that are costs incurred after the event. Oliver (1985) proposed several forms of ex-post costs of contracting. The first is related to the maladaptation cost when transactions drift out of alignment. In other words, costs are incurred when parties to a transaction fail to adapt to the environment or to achieve common goals. The second is the haggling costs that are incurred if parties in the exchange relationship make an effort to correct ex-post misalignments. The third is the setup and running costs associated with the governance structures (often not the courts) to which disputes are referred. In simple words, these are the costs incurred in dispute settlement between parties inclusive of the cost of hiring arbitrators and arranging in-person meetings. The fifth is the costs associated with bonding activities between partners to secure commitments. Scholars have argued that such costs can be circumvented significantly once the firms enter the IOR. According to Kogut (1988), a joint venture differs from a contract, because it straddles the borders of two firms ensuring efficient coordination between parties. Firms benefit from entering a strategic

alliance, as both contractual and relational governance is positively associated with alliance performance (Lee & Cavusgil, 2006). As a joint venture encompasses both formal contracts and relational governance, such governing mechanisms are key to resolving conflicts and enhancing coordination in the alliance (Madhok, 1995).

Asset specificity, uncertainty, and frequency are the three important dimensions of TCE in which transactions differ (Oliver, 1985). The first two— asset specificity and uncertainty— are frequently observed by scholars in studying governance structures in an IOR. Asset specificity is described as a substantial investment that is assumed in support of a specific transaction, the potential benefit of which investments is much lower in best alternative uses or by alternative users should the initial transaction be prematurely terminated (Oliver, 1985). The continuity of the relationship is only valued when the identity of the partners is substantiated. Contractual safeguards arise in support of this kind of transaction. The firms in the alliance rely more on contractual complexity when they assume potential loss in the investment in a specific asset (Reuer & Ariño, 2007). The substantial investment in transaction-specific assets can more likely increase additional safeguards by relying more on complex contracts by partners in a transaction under an alliance (Mellewigt, Madhok, & Weibel, 2007).

Like asset specificity, anticipated uncertainty by the parties in an alliance can significantly increase transaction costs. Oliver (1985) attributed uncertainty to opportunism and referred to it as behavior uncertainty. As one of the prime assumptions of TCE, it characterizes human nature by reference to opportunism, and in anticipation of the higher potential of encountering opportunistic behavior by the partner, firms in the alliance rely on complex contracts. Such adaptation does not come without a higher governance cost. Behavior uncertainty is assumed to be higher when the identity of the partners is unknown. Under such a circumstance should there be a higher level of transaction-specific assets, fearing knowledge spillover and loss in opportunistic cost due to premature termination, firms rely on complex contracts. Firms are more likely to initiate a formal contract when there is a higher potential for behavior uncertainty between partners (Abdi & Aulakh, 2017). More hierarchical alliances are preferred for transactions when contractual hazards are more severe (Oxley, 1997).

In conclusion, the transaction between parties is the basic unit of analysis. Any complications that are directly or indirectly associated with a contracting problem are

investigated in transaction cost economizing terms. Transaction cost economies are realized by allocating transactions that differ in their attributes to governance structures in a discriminating way. The choice of governance mode—of which the classical market contracting or market mode is at one extreme of the continuum, the hierarchical mode at the other extreme, and mixed modes or hybrid mode in between— depends upon the attributes of the transactions involved. Asset specificity, uncertainty, bounded rationality, and opportunism are significant in the study of transaction cost economies.

3.5.2 Social Embeddedness Theory (SET)

Developed from social exchange theory, social embeddedness theory (SET) is based on the premise that economic action is embedded in the structures of social relations, in modern industrial society (Granovetter, 1985). The term embeddedness was first coined by Polanyi (1944), in his book The Great Transformation, to describe and interpret the effectiveness of social structure in the functioning of economic transactions. According to him, it is significant for researchers to consider the reality of society (as a connected body of people) in studying the process of economic life, as all observable economies are embedded, submerged, and absorbed in institutions, financial and non-economic (McKeever, Anderson, & Jack, 2014). The embeddedness argument stresses that instead of pursuing economic gain through guile and opportunism, individuals rely on personal relations and networks of such relations; trust generated from such relationships discourages malfeasance, and further widespread preference of individuals transacting based on reputation implies that they normally rely on social relationships to guard against trouble rather than institutional arrangements (Granovetter, 1985). A general premise of SET is that no alliance is ahistorical; extensive prior interaction with a particular firm creates familiarity, thus enabling firms to enter an exchange relationship (Gulati, 1995b).

SET criticizes the transaction cost economy (TCE), for describing an individual as an opportunist and having an atomized under socialized assumptions of human action, persistent in a utilitarian thought (Granovetter, 1985; Uzzi, 1997). Based on classical and neoclassical economics, TCE assumes that the formation of an alliance is entirely based on the transaction costs associated with an investment in transaction-specific assets in producing a component either internally or with the outsider. The

upshot of the above argument is that if the transaction costs associated are determined to be lower in producing a component with another firm, then the firm may choose to enter an alliance with that firm; otherwise, the component is developed internally. The predominant problem with TCE is that it disregards social forces that enable firms to enter an alliance with another firm. It has also been argued that a series of prior interactions with a particular supplier can lead a buyer to enter embedded ties. As already discussed, much of utilitarian thought includes both the classical and neoclassical assumptions that individuals are rational, manifest self-interested behavior, and are affected minimally by social relations similar to the "market" mode of governance as described by Williamson (1991). At the far end of the exchange continuum lies embedded ties, where transactions between firms and individuals are assumed to be constrained by ongoing social relations, also known as a "network" (Gulati, 1998; Gulati & Nickerson, 2008; Powell, 2012; Uzzi, 1997). As SET assumes that both economic exchanges between parties to a transaction are socially embedded and that the type of relationship between parties is socially reciprocal, the assumptions can be classified into three components. Uzzi (1997) in conducting a field and ethnographic analysis of the women's apparel industry in New York identified three major components: trust, fine-grained information sharing, and the joint problem-solving arrangement. These three components as assumptions of SET are briefly described in the following paragraphs.

According to SET, since parties in a transaction are socially embedded, trust between the parties keeps the alliance going. Indeed, SET highlights the role of trust in facilitating exchange transactions. In business, trust is defined as a firm belief by individuals or organizations in the reliability, truth, or ability of partners in a transaction. Therefore, SET assumes that when there is trust between parties, an exchange partner abstains from opportunistic behavior at another's expense and appears to have a predisposition toward interpreting another's motives and actions positively. Several authors have accentuated the role of trust in alliance formation, the exchange of information, the choice of governance structure, the interchange of resources, and alliance performance. Prior and indirect ties create social networks, and as the participants in such networks know each other they develop trust which eventually makes them anticipate less risk in forming new alliances (Gulati, 1995b). Trust

facilitates the constant and open sharing of information, which results in proper coordination and thus renders formal arrangements for information sharing between parties in the strategic alliance (Ring & Van de Ven, 1992). Preexisting inter-organizational trust (IOT) influences and complements the choice of governance mode (market, hybrid, or hierarchy) and also improves exchange performance (Gulati & Nickerson, 2008). The existence of trust between parties in the alliance weakens contractual complexity regardless of the extent of asset specificity (Mellewigt, Madhok, & Weibel, 2007). The higher the level of trust between the CEO and the board is more likely to promote new joint ventures (Gulati & Westphal, 1999). Uzzi (1997), argued that trust promoted the exchange of a range of assets that were difficult to measure in terms of price. Such assets included favors from manufacturers, reciprocity, and regard for the value of long-term relationships. He also argued that unlike in atomistic where impersonal contractual ties are manifested as a governance structure, under embedded ties trust is an alternative governing mechanism. The essence of an alliance is trust between partners, and it has been argued that trust is a determining factor in alliance performance, as trust facilitates the efficient exchange of resources. With trust in inter-firm exchange at two levels (both individual and organizational levels), the costs of negotiation can be dramatically decreased, and conflicts can be easily resolved, resulting in ultimate exchange performance (Zaheer, McEvily, & Perrone, 1998).

As SET stresses that economic exchanges are socially embedded, it also assumes that under embedded ties there exists fine-grained information transfer between the parties in a transaction. Uzzi (1997) stated that information exchange between parties in embedded ties was more proprietary and tacit than price and quantity data, which were exchanged in the atomistic market. According to him, such information is inclusive of strategic information, profit margin, as well as the tacit information acquired on the job. Similar findings were made by Owen-Smith and Powell (2004). They conceptualized the network as a conduit or “pipeline” underscoring the benefit of the diffusion of the free flow of information and resources from position to position within a network structure. The logic behind the conceptualization of the network as a conduit, where it serves as a channel to disseminate knowledge, information, and resources, is based on a SET notion, where repeated interaction between parties can cause their inter-firm relationship to become

socially embedded. Once the buyer and seller enter into embedded ties, unlike the arm's length contract, price no longer serves as a sufficient statistic. The relationship between buyer and supplier deepens as the reciprocity begins to result from trust, which helps them to share information and knowledge. Social networks serve as an important conduit of information flows, where entrepreneurs with structurally diverse networks are more likely to access private information, which is a great opportunity provided by a social network (Stuart & Sorenson, 2007). Not just information and knowledge, but entrepreneurs with diverse networks can have access to financial support from their significant partners. The repeated exchange of information between parties builds trust, and financially supporting each other in times of need soon becomes a reciprocity norm under embedded ties. For example, Manolova, Manev and Gyoshev (2014) highlighted the role of the domestic financial network in up bringing of small business ventures into the transitioning economy, making them competitively successful in emerging markets. As information shared between parties is holistic and tacit, with repeated interaction it becomes obvious what partners are seeking. The information that permeates the network is accurate and reliable, reducing the costs involved significantly. Personal networks are critical conduits that reduce the transaction costs associated with information search and processing significantly (Lazzarini, Claro, & Mesquita, 2008). Thus, as compared to price and data exchange in the atomistic market, information exchange in embedded ties is more tacit and holistic. This means that under the embedded tie every part of information is interconnected with each other and can only be understood by reference to the whole. This is only possible when there exists frequent communication between parties. Although the information exchange in embedded ties is intricate and detailed, the social identities of the exchange parties enable them to process such complex information into chunks. These features of embedded ties act as a conduit to convey the preferences and ranges of the strategic options available to the exchange parties, enhancing the efficacy of IOR coordination.

Uzzi (1997) stated that in embedded ties the parties in an economic exchange jointly solve their problem rather than search for exit options. Since the exchange relationship is socially embedded, joint problem-solving becomes another assumption of SET. SET stresses that all economic exchanges are socially embedded; hence it becomes significant for parties in a transaction to resolve problems jointly, rather than

seek another party as is common in the arm's-length contract. The "hybrid" mode of governance developed by Williamson (1991), which is supported by the neoclassical excuse doctrine, assumes that parties to a contract are bilaterally dependent and any conflict arising out of a disturbance is settled either by introducing third a party arbitrator or without an arbitrator. Court settlements are not a sole recourse. Powell (2012) referred to Williamson's "hybrid" form of governance as a "network" form in his comparative study of the economic organization. Williamson (1991) was criticized for developing the hybrid mode from the perspective of the transaction cost economy. He argued that the choice of the mode of governance structure opted by firms is determined by the transaction costs associated with the transaction-specific assets involved and not by social forces. Powell (2012) proposed that under the network form, the means of communication is relational rather than the price in the market and routines in the hierarchy. The method of resolving conflicts is rather through the norm of reciprocity than resorting to court settlements and administrative fiat. Reputational concern also plays a determining role in the continuity of a relationship. As firms and individuals are socially embedded in social networks, any intentional self-interest behavior will cause their reputation to deteriorate as word spreads quickly in a network (Uzzi, 1997). Hence parties tend to resolve conflicts arising out of misunderstandings jointly as every decision is taken giving more attention to a long-term perspective. Once the firms enter embedded ties or enter a strategic alliance to jointly build a component, an immediate exit is least preferred due to the high cost associated with searching for new partners. Any problem arising during the alliance is resolved jointly rather than seeking an exit option as searching for a new partner can be very costly. Firms in a strategic alliance tend to deliver all related information on demand once they develop a new relationship based on prior interaction. Such exchanges of information between firms in alliance help find errors and jointly solve them as well (Faems et al., 2008).

As the parties in embedded ties trust each other, exchange information freely, and jointly solve their problem such qualities promote the economies of time (the ability to capitalize quickly on market opportunities). This is because the transaction details are generally sorted out to protect against malfeasant behavior (contracts, price negotiations, scheduling) and are negotiated "on the fly" or after the production, unlike in the arm's length contract where such protection is negotiated before production

(Uzzi, 1997). Furthermore, fine-grained information transfer prompts efficient data exchange, enabling firms to comprehend each other's production methods and enhancing smooth decision-making. Joint problem solving, which is a prime feature of embedded ties, increases the time taken from manufacturing the product to introducing it into the market by resolving problems in real-time during production. Rather than seeking outside help, all problems related to the business are jointly resolved as parties are socially embedded and search deeply for solutions within the relationship. This reduces costs related to searches significantly. As SET proposes that parties in an economic relationship are socially embedded, it assumes that trust between the parties is the essence of embedded ties. Uzzi (1997) discovered that trust parties in an embedded tie are more willing to take risks that create economic opportunities for three reasons. First, the parties in a transaction expect that there will be reciprocity of noncontractual and nonbinding exchanges. Second, all of the complexity arising out of the parameters will be reduced significantly in social networks as individuals are familiar with each other. Third, required resources are easily accessible in social networks as business partners, friends, agents, and mentors are linked together.

Whereas TCE is criticized for having an under-socialized view and describing individuals as opportunists, SET is criticized for having an over-socialized view and describing individuals as altruistic and always preserving selfless acts. Although SET assumes there exists trust between parties as economic exchanges are socially embedded, it has been argued that over a long period trust between parties can gradually diminish. It has also been observed that repeated unfair treatment can deteriorate trust significantly. Consistent with the study on keiretsu ties (Smitka, 1989), Uzzi (1997) also identified that continuous abuses, and non-trivial mistreatment by one party to another can lead to the deterioration of long-term relationship. SET argues that in an economic relationship, the parties in an exchange are socially embedded, and hence all of the information and resources are fairly shared. However, it has been argued that firms can also maintain loose ties with their partners so that they can explore other areas or ventures that may not seem possible with their existing partners. Being tightly coupled with their partner can deprive firms from seeking other ventures that can quickly capitalize on their market opportunities. The members in the networks, due to embedded ties with their partners, are often disbarred from discovering opportunities

and information outside the network, and their local adaptability can be limited significantly (Ingram & Baum, 1997).

3.5.3 Resource Dependency Theory (RDT)

Pfeffer and Salancik (2003) in their book, The External Control of Organization: A Resource Dependence Perspective, stated that "to understand the behavior of the organization you must understand the context of that behavior – that is the ecology of the organization." Therefore, from the resource dependency perspective, the organization is an open system inescapably either tied up or associated with the external environment, and its actions are determined by external factors (Pfeffer & Salancik, 2003). As no organization is completely self-sufficient, to survive firms and organizations must acquire resources from the external environment. However, the environment on which the organization depends to survive is bound up with uncertainties. Three key concepts are used in developing this perspective: a) organizational effectiveness, which is the ability of an organization to create favorable outcomes and actions; b) the organizational environment in which firms and organizations are embedded; and c) constraints that is organization-environment relationship is a constraint. Further, RDT is based on three main assumptions: a) the role of management is merely symbolic; b) an organization is a rational instrument and is goal-oriented, and c) the number of organizations trying to control other organizations is abundant. According to Pfeffer and Salancik (2003), organizations, to reduce environmental dependencies, can take five major actions: a) mergers and acquisitions, b) joint ventures and other IORs, c) boards of directors, d) political action, and e) executive succession. RDT is often criticized for characterizing firms and organizations as rational and as being goal-oriented.

The very first concept that supports this perspective is organizational effectiveness. Effectiveness is not to be confused with efficiency. Under the resource dependency perspective effectiveness is defined as the ability of firms and organizations to create outcomes and actions that are favorable to them. The effectiveness of an organization is evaluated by those who are most affected. This means that the product developed by a firm is questionable if it does not meet the requirements or demands of certain people who are asserted to be prime stakeholders.

In the words of Pfeffer and Salancik (2003:11), “Organizational effectiveness is an external standard of how well an organization is meeting the demands of the various groups and organizations that are concerned with its activities.” According to them, it is those outside the organization that ultimately judge the activities of the organization that are prime aspects of this concept. However, this does not mean that the role of the organization is completely dwarfed by outsiders; the organization does have the discretion to manipulate, influence, and create favorable environments for its activities. Although the activities of the organization are judged by outsiders, this does not imply that the activities of an organization should concern every aspect of the environment. Hence, the second concept of this perspective is the organization’s environment. The environment in which the organization is embedded assimilates every event in the world that has either an effect on the activities of the organization or can have no effect at all. There are two reasons why every element in the environment has little effect on the organization. First, organizations are isolated and buffered against all the events of an environment. Second, organizations need not respond to every event in the environment as most of the events do not come to their attention, and their occurrence is not significant enough to require a response. According to Pfeffer and Salencik, the environment in which organizations are embedded is not a predetermined reality but is created through processes of attention and interpretation. The organization itself is responsible for how it wants its response to be influenced by the environment. The department that has been designated for gathering, screening, selecting, and retaining information is the one that determines the activities of an organization. To put it in the words of Pfeffer and Salencik (2003:14), “information regardless of its actual validity, comes to take on an importance and meaning just because of its collection and availability.” Apart from the effectiveness of the organization and the organization’s environment that determines the actions that organizations take to minimize dependency on the environment are constraints. It has been argued that the constraints of actions depend upon one’s response to a situation. If the response to a situation is more probable, then the action is said to be constrained, otherwise not. If the response to a situation is more random, then it is implied that the action of an individual is not constrained. Likewise, an organization’s behavior is often constrained by surrounding environments such as policies, regulations, rules, personal preferences, and social

norms, and also by cognitive capacity, restricting creativity and adaption. Constraints, although they seem to be undesirable in terms of an organization's actions or responses, they indeed are also necessary as they facilitate the choices and decision processes. This third concept of the dependence perspective explains why the management role is dwarfed by the performance and activities of organizational systems.

The first assumption of RDT is the symbolic role of management. This perspective assumes that the role of a leader, including CEOs, managing directors, and CFOs in an organization is merely to serve as a symbol. As the organization is an open system, it is vulnerable to various factors arising out of the environment on which it is dependent. Organizations, to survive, must establish a system that is guided by both internal as well as external policies, and other social norms. Such policies and guidelines, and rules and regulations can simply dwarf the role of leaders or managers leaving them with less autonomy for creativity and adaptation. Additionally, the primary missions and objectives of an organization can necessarily make the role of leaders trivial. This assumption is supported by the notion that individuals generally are assertive and have the desire to attribute all of the results of their actions. In other words, an individual's (designated in a leadership position) desire for the need to have control over their social surroundings is partially responsible for the tendency to attribute the success of the organization to their efforts. However, given the vast environment in which organizations are embedded and the objectives, missions, and policies that delineate organizations' activities, the role of a manager is merely symbolic. Hence to divert the peoples' attention from the impotence of leadership, a ritual is conducted indicating a great power. As spectators have a predilection to believe in the efficacy of leadership and personal action, it is also likely that if the organization's success is attributed to the efforts of a manager, then the manager is also held accountable for all of their failures regardless of their minimum control of the social environment.

Probably the most predominant assumption of the resource dependency perspective is that this view characterizes an organization as a rationally driven instrument to achieve goals or a set of goals. In the words of Pfeffer and Salancik (2003:23), "This goal-oriented or instrumental view of organizations implies that organizations are collections of individual efforts that come together to achieve something which might not otherwise be accomplished through individual action." This

view is supported by several conditions. First, to survive an organization attends a coalition where various participants are included as long as they serve the objectives of the organization and benefit from the coalition. Organizations' participants' involvement in the coalition is justified when there are some benefits to be gained. When there are no perceived advantages to be gained, participants may leave the coalition. The second condition is competing demands. The different groups of stakeholders have different criteria for evaluating organizations' activities and this creates problems. As organizations cannot meet all of the competing demands, they must choose one that benefits its objectives the most. Since the demands of coalition stakeholders are not always consistent, satisfying one party may offend another. Organizations often face the problem of what to include and what not to include in developing their products. Hence the third condition that supports this view is defining the organizations' boundaries. The boundary of an organization is defined by its activities which it can control or the limitations of its discretion to control its activities over the activities of another organization. It is the activities of the organization and not the individuals that matter. The individual can be replaced by another who can continue the same activities. The fourth condition that supports this view is organizational effectiveness. Organizational effectiveness is described as the extent to which the input and output of an organization meet the evaluating criteria of various stakeholders, organizations, and individuals. Hence, according to RDT organizations are rational instruments driven to meet the effectiveness criteria of various stakeholders to survive in the social environment.

As RDT characterizes an organization as a rational instrument set out to achieve goals, the prime functions of organizations are also to control and modify the activities of other organizations. Hence, the third assumption of this perspective is that it views the social system as inclusive of a large number of organizations trying to control other organizations. For example, there are regulatory bodies that are established to control and alter the activities of firms and organizations. This assumption is supported by the concept of interdependence. According to Pfeffer and Salancik (2003), interdependence in a social system and social interaction exists when one organization or actor recognizes the lack of complete control of all conditions that are significant for achieving an action for desired outcomes. According to them, there are three conditions

for the existence of the interdependence between organizations. Organizations are never self-contained or self-sufficient; they rely on the environment for support. In other words, organizations require necessary resources to survive; they cannot self-produce all kinds of resources. Hence the first condition is the significance of resources which is the extent to which organizations must obtain to continue their activities. Organizations enter into an exchange with another organization to obtain resources that are required for survival. A buyer firm enters an exchange relationship with the supplier firm to purchase products that are critical for their survival. The dependence on resources becomes more severe when an organization develops or creates only one product. Further, the dependence increases when a resource becomes critical for the functioning of an organization. The second condition that supports the existence of interdependence is that there must be discretion in the allocation and use of resources by certain stakeholders. Organizations manifest discretion over the allocation and use of resources for several reasons. One basis for the control of resources is possession. When an organization possesses certain types of resources it becomes important that it control them. The second, basis for control is access to resources. It becomes imperative for organizations to have access to resources without owning them. Hence an organization can enact a situation where it can deprive its competitors from accessing the resources. Another basis for control is the actual use of resource and who can control them. Resources can likely be controlled by other than the owners of the resources. The final basis for control is the ability to control the use of resources by an interest group or groups. The stakeholders can make rules or otherwise regulate the use and allocation of resources. The rules and regulations can make use of resources exclusively. Due to the limited availability of resources, only a few concerned organizations that can control them can use them. Finally, the third condition that determines interdependence is limited alternatives or the extent to which the interest group has control over the resources. In other words, few organizations can make input or output transactions out of the available resources. This ability of a few organizations to have control over resources is called the concentration of resource control. Organizations can create a concentration in multiple ways. They can do so by having a legitimate monopoly position or they can also form an association or group cartel to have concentration over the desired resources. The problem is not that power is concentrated but that others have

limited access to that power. Enacted rules and regulations restrict accessibility regardless of the availability of alternatives.

Pfeffer and Salancik proposed five options that firms and organizations can initiate to minimize environmental dependencies: a) mergers and acquisition; b) joint ventures and other IORs; c) appointment of boards of directors; d) political action; and e) executive succession. RDT has become a dominant perspective to explain all five options in which firms and organizations can engage. However, due to the limited scope of this research, only one option out of five is discussed in this section. Although RDT is dwarfed by TCE in justifying the formation of joint ventures and other inter-firm relationships, analogous to the merger literature, this perspective is also extensively used in the formation of joint ventures and other IORs (Hillman, Withers, & Collins, 2009). Earlier research on inter-organizational suggests that firms enter an alliance with other firms to minimize domestic as well as cross-national environmental dependencies and to gain resources (Elg, 2000; Goes & Park, 1997; Stearns, Hoffman, & Heide, 1987). Other research on the IOR focuses on firms entering an alliance for complementary resources and capabilities (Gulati & Sytch, 2007). Regarding capabilities, it also becomes important for firms to develop their capabilities for the alliance relationship to pay off (Liu & Ravichandran, 2015). Firms and organizations often need to enter a special type of alliance, the so-called strategic alliance, to develop competitive products. Firms are not self-sufficient and they do not possess all types of knowledge to develop new technology; hence, a firm often enters a strategic alliance with another firm to acquire new technology and the information required for developing new products. A strategic alliance offers aspiring firms alternatives to join forces with other firms in pursuit of opportunities and resources that otherwise would have been unlikely with the firms' current capabilities (Teng & Das, 2008). The need for inter-organizational coordination is attributed to the fact that the alliance partners inherently do not have all of the necessary information to position their actions with the activities of their counterparts to achieve common objectives (Schilke & Goerzen, 2010). Frequently entering an alliance can help a firm develop more formal routines, thus increasing its capability to enter more sophisticated alliances like joint ventures. Not only does an alliance serve as a gateway to a gamut of resources and competence outside the world, but a carefully designed network can itself prove to be a crucial

resource of the firm (Sluyts et al., 2011). An alliance can also exist between buyers and suppliers. A buyer firm, to ensure an uninterrupted supply of resources, can enter an exchange relationship with a supplier firm. Earlier research on the inter-organizational relationship has also focused on the buyer and supplier firm entering the IOR to reduce environmental dependencies (Murray, Kotabe, & Zhou, 2005; Provan & Gassenheimer, 1994; Skinner, Donnelly Jr, & Ivancevich, 1987). There is also evidence that the buyer's satisfaction with a supplier is positively associated with the level of economic payoff achieved from the focal relationship (Sa Vinhas, Heide, & Jap, 2012). The partner's profile, which constitutes knowledge, information, and status, also plays a significant role in the formation of an alliance. Joshi and Lahiri (2015) proposed a road map with four crucial steps that firms use in alliance formation. These four steps are identification, evaluation, negotiation, and implementation. Under the evaluation step, firms filter and select eligible partners and validate the possibilities and attractiveness of the joint alliance with the selected partner. In sum, firms and organizations must form joint ventures or other inter-organizational relationships as the firm and organization alone cannot generate all kinds of resources to sustain their competitiveness. Also, to reduce environmental dependencies, firms are compelled to enter different kinds of alliances with significant partners.

This perspective is criticized for having a positivist view of the organizations, as RDT characterizes the organization as a rational instrument that can be used in achieving certain sets of objectives. Organizations, according to this view, are regarded as instruments or a coalition where the individual as a participant joins the organization to fulfill their objectives. Once the individuals no longer perceive their advantages from the organization, their participation in the coalition ceases to exist. This rational view of the individual completely ignores the fact that economic exchange is socially embedded and that people also participate in exchange for social reasons other than economic gains. The involvement of the organization in a coalition is not always ahistorical, and the coalition can occur due to a series of past interactions. Another assumption of the resource dependency perspective that has been criticized is that it views the role of leadership merely as symbolic. According to this view, the role of leaders is dwarfed by the activities of organizations. The positive effect of leadership on organizations and their followers is completely ignored by this perspective. Another

view that has been criticized is the view on the strategic interdependence of organizations. According to RDT, organizations to gain resources that are critical for survival attempt to control another organization, and that firm exits in an atomistic system where information and knowledge are freely available and opportunities for alliance are exogenously presented. RDT assumes that firms in such a context are rational actors and are aware of the strategic interdependence they face and meticulously identify eligible partners to whom they can validate the possibilities of interdependence. RDT completely ignores how firms learn about a new alliance and overcome the fears associated with such kind of a relationship (Gulati, 1995b). Similarly, Hillman, Withers and Collins (2009) have argued that the resource dependence perspective alone does not justify the formation of a joint venture and other inter-organizational relationships. Indeed, he proposed that integrating RDT with other theoretical perspectives will provide a better understanding of the dynamic nature of dependency between not only organizations but also between buyers and suppliers and the complexities that occur in strategic interdependencies.

3.5 Comparison among the Three Perspectives in Analyzing Buyer-Supplier Exchange Performance

Only one perspective does not fully justify the formation of an alliance between two firms. The transaction cost perspective argues that firms and organizations enter an alliance depending upon the transaction costs associated with the degree of transaction-specific assets and the level of anticipated uncertainty involved. However, this perspective ignores the social forces that enable a firm to choose the right partner and overcome the risks associated with the IOR. The social embeddedness perspective argues that the formation of an alliance is not ahistorical. Indeed, a series of past historical interactions either between individuals or firms can lead to the formation of an alliance. This perspective however assumes trust between the partners in the alliance and ignores the transaction costs associated with the formation of alliances. Likewise, the resource-dependence perspective views firms as rational and goal-oriented, and hence firms enter an alliance in pursuit of resources that they cannot inherently possess.

However, this perspective, like TCE, ignores the social forces that cause firms and organizations to enter the alliance. Several authors have integrated all three perspectives or have at least combined two perspectives to show the multiple effects on alliance performance or alliance formation. Zhong et al. (2017) have integrated TCE, SET, and RDT to retheorize inter-organizational trust (IOT) in IOR in their metal analysis study. Gulati (1995b) proposed the social context arising from a prior alliance and regarded that strategic interdependence enables a relationship decision between firms. Hillman, Withers and Collins (2009), in their review of RDT, argued that resource dependence alone does not justify the formation of a joint venture and other IOR, and hence proposed that combining this perspective with other theories will provide more comprehensibility in alliance formation. Therefore, the present study develops a conceptual framework integrating three theories to show the effect of the key factors derived from these three perspectives on exchange performance between buyer and seller (Table 3.3).

Table 3.3 Summary of Resource Dependence Theory (RDT), Transaction Cost Economy (TCE), and Social Embedded Theory (SET)

Theory	Key Concept	Key Assumptions	Key Proposition	Connection to Alliance performance/formation
Resource Dependence Perspective (RDT)	The organization is an open system inescapably either tied up or associated with the external environment where their actions are determined by external factors	Characterizes organizations as rational instruments for achieving objectives or sets of goals	Organizations are neither self-contained nor self-sufficient; hence, to survive organizations must gain resources	-Firms and organizations enter or form an alliance to minimize environmental dependencies. -Through the IOR, organizations can gain critical resources for survival
Transaction Cost Economy (TCE)	-Refers to the expenses incurred for drafting and enforcing the contract. -The unit of analysis is transaction cost. -Contract is drafted to protect the interest of parties in a transaction	-Individuals are rationally bound and are unable to foresee uncertainty. -Parties to a contract are opportunistic and have guile. -Perceives organizations as a governance structure rather than a business unit	-The degree of contractual complexity depends upon the extent of the transaction-specific asset involved and the extent to which uncertainty is anticipated. -The extent of the transaction cost anticipated depends on the level of asset specificity involved and the extent of uncertainty	-Firms and organizations form an IOR depending upon the extent of the transaction costs associated with a transaction-specific asset. -A formal contract between parties is initiated in anticipation of the uncertainty involved in the alliance
Social Embedded Theory (SET)	Is based on the premise that economic action is embedded in the structure of the social relations in modern industrial society	-Assumes there exists trust and harmony between parties in a transaction -Parties in an alliance have a predilection to jointly solve the problem	-A series of prior interactions with the same individual develops familiarity enabling the firm to enter an alliance -Trust between individuals acts as an alternative governance mechanism to prevent the parties in the transaction from behaving opportunistically	- Trust between parties in an alliance acts as a governing mechanism to ensure that the activities of individuals align with the objectives of the alliance. -Trust also ensures that required information and knowledge are shared efficiently between parties in the alliance

Note: Author's own elaboration

This study surmises that RDT, TCE, and SET are inter-temporally connected because firms and organizations enter a JV and other IORs to gain resources. Alliance formation requires the drafting of a contract to ensure a smooth transaction. As economic activities are embedded in the structure of social relations, a series of resource exchanges can give rise to trust. Trust in turn is the essence of alliance performance. All three perspectives are used in developing hypotheses to show the importance of resources, formal governance, and trust in the alliance performance or exchange performance between buyer and supplier.

Although RDT justifies the formation of a joint venture (JV) and other forms of inter-firm alliances, this theory however does not talk much about the choice of governance structure by firms and organizations while forming alliances. This perspective assumes that firms and organizations exist in an atomistic environment where information is freely and easily accessible. Characterizing organizations as rational instruments for achieving goals, this perspective ignores that economic activities are embedded in the social structure and that a series of exchanges between parties can engender trust. Also, RDT overlooks how the organization forms a governance structure and uses the formal contract to minimize the risks associated with the alliance. The key proposition of RDT is that once the organization realizes the need for resources for survival, it seeks alternatives to gain advantages either by forming an alliance with another organization or by other means.

The transaction cost economy (TCE) is regarded as a predominant perspective in explaining why firms and organizations enter joint ventures and other IORs. This theory indeed dwarfs RDT in justifying the formation of inter-firm relationships. This theory assumes that parties in a contract are rationally bound and is often criticized for characterizing individuals as opportunists and as having guile. Similar to RDT, TCE also assumes that firms and organizations exist in an atomistic environment and all resources, including information and knowledge, are freely accessible and opportunities to enter the alliance are exogenously available. However, this theory also ignores that economic gains and exchanges are socially embedded and that the history of prior interactions with a particular partner can commence an alliance. The general premise of this theory is that it perceives the organization as a governance structure rather than considering the social forces that affect the decision of the choice of the

governance structure. The key proposition of TCE is that the extent to which a formal contract is drafted depends upon the level of transaction-specific assets and uncertainty involved in the alliance. The contractual complexity between parties occurs to minimize the risk associated with an alliance. A formal mechanism via structural governance is operationalized to ensure the smooth exchange of resources between parties in a transaction. It has also been argued that structural governance that uses a formal contract as a governing mechanism can result in a successful alliance.

TCE and RDT are extensively used in explaining why firms and organizations enter joint ventures and other kinds of alliances. Both perspectives assume that firms and organizations operate in an atomistic environment where the firm enjoys the autonomy to choose partners depending upon the resources and transaction costs associated. However, both perspectives ignore social forces. The general premise of social embedded theory (SET) is that all economic activities are embedded in the structures of social relations. This perspective assumes that instead of pursuing economic goals through rational means, individuals can rely on social relations and networks of such relations. From this perspective, there exists an embedded tie rather than an arm-length contract, and the reputation of the partner matters in the network of the relationship. Hence, SET assumes that parties in an exchange relationship trust each other and that individuals abstain from manifesting opportunistic behavior to make short-term gains. A history of prior interactions between particular individuals or firms develops familiarity, thus enabling them to form different kinds of alliances. Indeed, the frequent exchange of resources develops trust between parties in the alliance. Therefore, trust facilitates the efficient exchange of information and knowledge, resulting in successful alliance performance. There has also been an argument that trust between parties in the alliance minimizes not only associated risks but also the transaction costs arising out of contractual hazards. Trust is the essence of the alliance, and trust determines the choice of the governance structure while allying. The parties in the alliance are less likely to rely on formal governance when there is trust between them. Firms and organizations that have been through successful joint ventures are more likely to choose another form of governance structure such as relying merely on a formal contract rather than having equity as mutual hostage. There is evidence that

suggests that trust plays a role in alternative governance in aligning the activities of individuals with goals and the objectives of the alliance.

In sum, all three perspectives have significantly contributed to in-depth comprehensibility and in justifying alliance formation and alliance performance. These three perspectives are later combined to develop the conceptual framework. This conceptual framework proposes that both structural governance and relational governance are rather complementary than substitutional. The framework is used in studying the effects of the determinants in alliance formation and the performance of the alliance. It is to be noted that the perspectives mentioned above separately contribute to different aspects of the alliance, as no single perspective solely explains the alliance formation.

The application of these three perspectives in establishing a concrete foundation to study how interdependence, structural governance, relational governance, and trust contribute to the efficient exchange of resources, which in turn result in alliance performance, is discussed in the next section.

3.6 Model Development

The proposed model is developed through the lens of the dynamic evolution of the alliance. This view postulates that several exogenous as well as endogenous factors influence the development of arm's-length dyadic exchanges to joint ventures and other inter-organizational relationships, such as the buyer-supplier exchange relationship. Thus, the exchanges between parties in a network are not static; indeed, the development of an alliance or IOR passes through several stages. Scholars have sought to uncover some of the key stages that unfold in the exchange relationship. Larson (1992) for example identified 4 key stages in the development of network dyads, which constitute the preconditions for exchange, the conditions to build, integration and control, and the network dyad (figure 5). Likewise, Garbade, Omta and Fortuin (2016) uncovered four phases of the strategic alliance. Those four phases are alliance potential, alliance formalization, alliance execution, and alliance performance. Scholars have made considerable efforts to understand the factors that influence the development and

possible stages through which an alliance can advance. For instance, Gulati and Gargiulo (1999) proposed that a dynamic process involving both exogenous resource dependencies, which encourage organizations to seek cooperation, and 'endogenous embeddedness', a dynamic process, in which commencing the network progressively orients the choice of partners, are the key factors in the production of inter-organizational relationships. Lakpetch and Lorsuwannarat (2012), on the other hand, from the perspective of the resource-based view (RBV) argued that partner complementarities such as strategic alignment and source attractiveness are the antecedent conditions for the university-industry strategic alliance. These conditions in relationship with other factors such as partners' attributes and relationship capital were seen to be the determinants of the effectiveness of knowledge transfer.

Adopting the three different perspectives—RDT, TCE, and SET— a new construct from the lenses of the dynamic evolution of the alliance for testing exchange performance between the buyer and supplier is proposed. From the proposed model (figure 6) it can be summarized that the determining factors of the performance of the buyer and supplier relationship, an ultimate criterion of this model, include "perceived dependence," "structural governance," "relational governance," and "resources exchange." The relationship among these variables is manifested from the perspective of the dynamic evolution of the alliance. According to this perspective, the development of the exchange relationship or alliance has several stages—from antecedent conditions to cooperation to joint alliance. Therefore, the conceptual framework has four phases: a) phase 1: exchange potential; b) phase 2: exchange formalization; c) phase 3: exchange operationalization; and d) phase 4: exchange performance. The exchange potential phase refers to the time when organizations realize the need or conditions to enter into cooperation or to seek an alliance. Once the alliance partner is identified the phase advances to the formation of the alliance where all of the deals for future exchanges are formalized. The third phase is where the exchange is operationalized, and is the phase where communication, the exchange of information, and resource exchanges are developed. The fourth phase is where exchange performance is tested. This conceptual framework includes the research variables that fall into each phase to better understand and assess their influence on the exchange performance between buyer and seller.

3.5.4 Phase I: Exchange Potential

The resource-dependence perspective postulates that organizations can take various actions to minimize environmental dependencies. Further, organizations are not self-sufficient, and hence to obtain the resources that are necessary for survival, an organization can form a joint venture or other inter-organizational relationships. This study defines the exchange potential phase as the exchange possibilities between two parties, in which the buyer realizes the consistent need for resources from the supplier. The dependency of the buyer on the supplier for the supply of resources also encourages the formation of an exchange alliance between two parties. This argument is consistent with the proposition made by Gulati (1995b). According to him, two firms with high strategic interdependence are likely to ally. When the buyer and seller develop a long-term cooperative exchange relationship that goes beyond the arm's- length buy and sell contract, that governs traditional market transactions such relationship is referred to as relational exchange (Provan & Gassenheimer, 1994). Such a relationship, where the buyer and seller agree to cooperate, anticipating repeated transactions in the future, is referred to as "hybrid" by Williamson (1985), and "network" by Powell (2012). Hence this study proposes buyers' dependencies as an antecedent condition for the formation exchange relationship with the supplier.

3.5.5 Phase II: Exchange Formalization

Once the potential exchange partner is identified, in the second phase the choice of the governance structure is finalized. Alliance is considered a discrete form of governance that is neither market nor hierarchy (Powell, 2012), yet firms and organizations are left with an array of choices in structuring their alliance (Gulati, 1998). Therefore, depending upon the characteristics of the alliance, a suitable governance structure is decided between partners. If an alliance is strategic, then generally partners decide to engage in a joint venture, where the equity from the partners is kept as a mutual hostage. In the case of other non-strategic alliances, such as the relational exchange where the buyer firm and supplier firm agree to cooperate to form a long-term relationship, structural governance a variant of formal contracting is implemented. Based on assumptions of TCE, structural governance uses structural agreements as a governing mechanism. The power of the structural agreement can be

defined according to two attributes. First is the degree to which, and the details of the structural aspects of the exchange relationship between parties are formally discussed (non-contractual agreement). Second is the extent to which those formally discussed non-contractual agreements are included in a formal exchange contract (contractual agreements) which can be used in a court case. A structural agreement is generally drawn in two cases. First, an agreement (both non-contractual and contractual) is drafted in anticipation of an appropriation hazard. Second, such an agreement is drafted to align partners' actions with the alliance objectives.

3.5.6 Phase III: Exchange Execution

This is the phase where information regarding various aspects of projects is shared between two parties. Since SET postulates that economic action is embedded in the structures of social relations, this study argues that the governing mechanisms of relational governance are essential for facilitating smooth resource exchange. Hence, this phase is structured into two parts: a) relational governance and b) resource exchange.

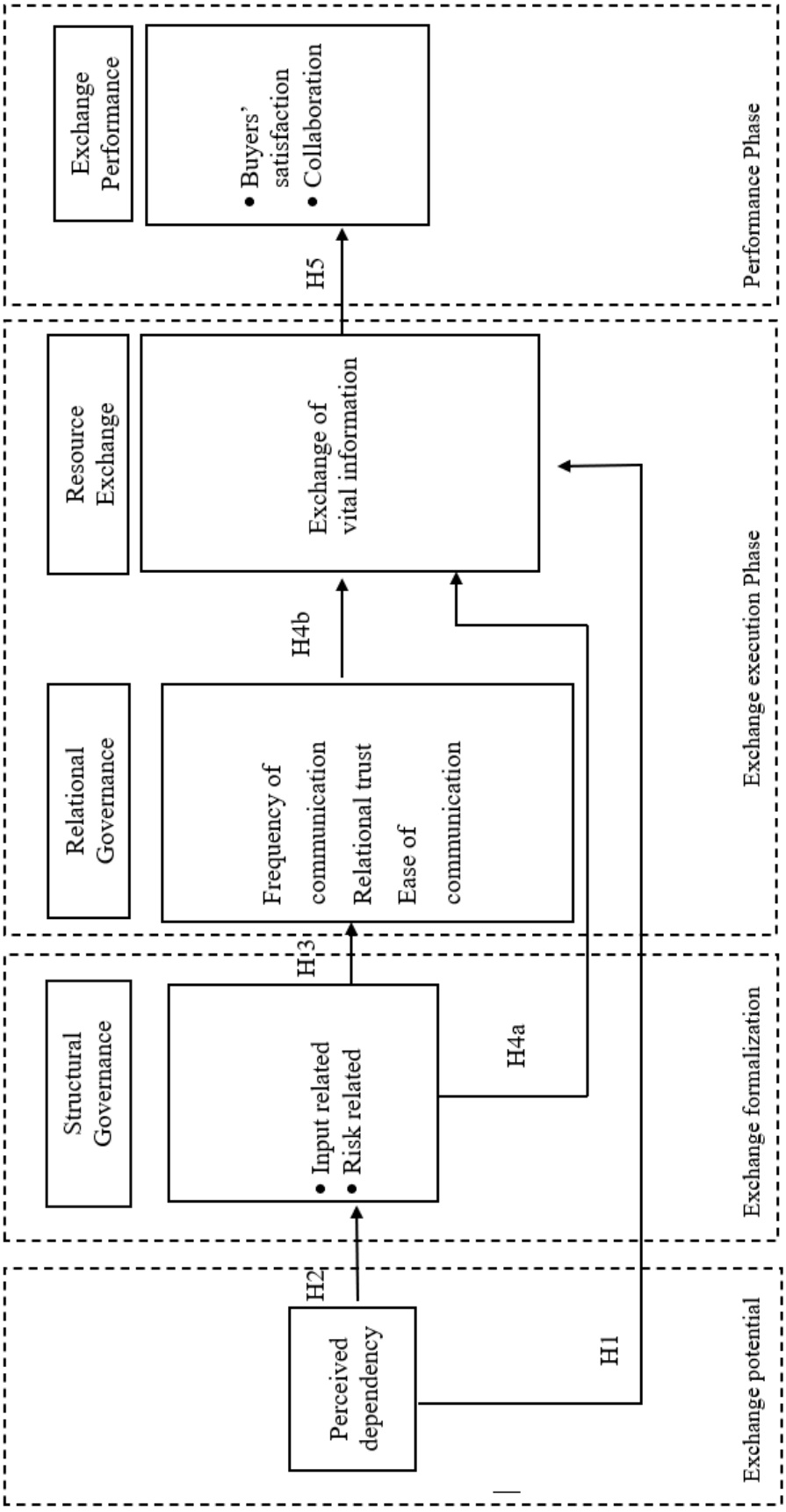

Figure 3.5 Proposed Conceptual Framework

3.5.6.1 Relational Governance

Based on SET, this perspective of alliance governance assumes that the parties in a transaction over time develop trust and mutual understanding. Such trust and mutual understanding become a self-governing mechanism that facilitates alliance performance. The key point is, that should they exit the original contract, the parties may or may not defer to it (Oliver, 1985). Indeed, the norms developed from ongoing relationships supersedes the original contract. Such a governing mechanism is either built on experience with the alliance partner or if no experience exists it is built on the alliance execution phase (Garbade, Omta, & Fortuin, 2016). Relational governance is also referred to as an endogenous mechanism that enhances exchange performance, where both external and internal information flows are fixed within the matrix of social ties that the parties in a transaction resort to rather than a contract or the enforcement of third-party arbitration (Uzzi, 1999). The key concept of relational governance is trust (Tepic et al., 2011). However, trust is only developed when there exists communication between parties. As relational governance is based on the repeated interaction between parties, such frequent communication develops trust; and trust opens up the ease of communication, enabling the parties to discuss various means to overcome problems associated with the alliance. Such mutual understanding facilitates exchange performance. Hence, this study takes the conceptual framework of having three variables representing relational governance. They are a) frequency of communication; b) trust; and c) ease of communication. Together these three variables facilitate resource exchange in the execution phase.

3.5.6.2 Resource Exchange

The essence of the exchange relationship is the exchange of resources that have been initially agreed upon by the parties in the exchange relationship. Another significant factor that completes the exchange execution phase is the resource exchange that takes place between the parties in an exchange. The type of resources that are exchanged between parties depends upon the type of alliance that the parties have agreed to form. Generally, under the strategic alliance, the type of resource exchange is knowledge-based. Since this study undertakes a non-strategic alliance between the contractor and material supplier, the type of resources exchanged here are information (intangible) and materials (tangible). This study proposes that both structural

governance and relational governance contribute to the efficient exchange of resources. Hence a sub-variable representing resource exchange considered in this study is information exchange. This variable completes the exchange execution phase and contributes to the success of the exchange relationship.

3.5.7 Phase IV: Exchange Performance

This study measures the performance of the buyer-supplier relationship from the buyers' perspective, which is appropriate because, in the construction industry, product and organizational architectures are largely defined by a buyer. In addition, this study adopts the contractors' perception of supplier performance to measure the degree of the consumer's satisfaction regarding their relationship with suppliers. This is consistent with the approach taken by Cabigiosu and Camuffo (2012). To measure exchange performance, this study relies on subjective measures from the buyers' perspective. The variable buyers' satisfaction is operationalized by the extent to which the supplier has met all of the requirements of the buyer.

Once the buyer and supplier enter into a relational exchange, it becomes necessary to identify the variables that predict exchange performance. All of the variables included in the conceptual framework are derived from the three predominant perspectives: a) resource dependence theory (RDT); b) transaction cost economy (TCE); and C) social embedded theory (SET). Developed from the perspective of the dynamic evolution of the alliance, the conceptual framework includes variables in each phase. This study proposes the combined effect of structural governance and relational governance on exchange performance. Indeed, it argues that structural governance and relational governance are rather complementary than substitutional to each other. This is because, as shown in the conceptual framework, a clear upfront contract and non-contractual agreement can reassure each exchange partner that the other(s) will not tend to act opportunistically. Once the exchange partners are adept at upfront agreements they tend to communicate more frequently. Such upfront agreements indeed facilitate the interaction among the exchange partners, and once the communication begins it develops trust. Relational trust and communication in turn result in efficient resource exchange, as exchange partners are now comfortable in communicating with each other.

Finally, when all commitments are perceived to have been met, it results in exchange performance.

As the upfront alliance between parties in a network is neither that of the market nor is it hierarchy, both structural governance and relational governance can have a significant impact on alliance performance. This is because when firms and organizations enter an alliance there is a high amount of risk associated with it. Such risks arise from uncertainty and asset specificity. The contractual hazards can cost both firms tremendously. Hence, to protect themselves from such hazards, firms, and organizations, before entering an alliance, draw an upfront agreement. The upfront agreements between the exchange partners delineate their roles according to the alliance objectives. However, structural governance alone does not justify the exchange performance. As economic action is embedded in the structure of social relations, exchange partners over some time develop trust. Such trust acts as an alternative governing mechanism that adds more value to social norms, thus enhancing alliance performance.

3.6 Hypothesis

3.6.1 Exchange Performance

The dependent variable that, this study considers is exchange performance. The organizations that enter an IOR are expected to have a complete understanding of the objectives of the alliance. Once firms and organizations enter the IOR they are expected to meet the prime objectives of the alliance. These objectives can range from the development of a product to the creation of a relational exchange where the exchange between buyer and seller goes beyond the traditional arm's length contract. Since this study focuses on the development of an exchange relationship between contractor and material supplier from a dynamic lens, the performance of the exchange relationship is measured in terms of relational value creation. The antecedent factors of alliance performance such as structural governance and relational governance, have been considered by several authors. Ferguson, Paulin and Bergeron (2005), for example, have shown the significance of both contractual and relational governance on interfirm exchange services; and Garbade, Omta and Fortuin (2016) have identified the essential

role of structural governance as a solid base for creating trust, a relational governing mechanism, in enhancing alliance performance. Likewise, Faems et al. (2008) in their qualitative study showed how the contents of a contract can influence trust dynamics at both operational and managerial levels; indeed, as the trust between alliance partners evolved, so did the trust. Another antecedent determinant that this study considers is resource dependency. According to the resource dependency perspective, firms enter into an exchange relationship for acquiring resources that they cannot solely generate. It becomes important for firms to seek resources that are needed for their survival. A buyer firm can form a long-term relational exchange with a supplier firm to ensure an uninterrupted supply of resources. Also, a buyer firm can benefit from valuable information from the supplier which would not have been possible without entering the exchange alliance. Therefore, the determinants of the exchange performance, that this study has considered, are perceived dependency, structural governance, relational governance, and resource exchanges.

Regarding the measurement of the dependent variable, exchange performance, this study adopts the approach of Howard and Squire (2007) and Jacobs, Vickery and Droge (2007). These approaches are widely accepted in understanding how inter-organizational (supply) relationship performance varies contingent on the degree of the coupling of the product and organizational architecture. The coupling of products here refers to the extent to which different components are combined to produce one single product. Products are a complex system comprising many components with many interactions between them. The coupling of organization architecture is defined as the extent to which an organization in the exchange relationship is involved in the design and production of the components that make a product communicate and exchange business and technological information, coordinating their decisions, actions, and efforts (Paulraj, Lado, & Chen, 2008). As in the construction industry, no such complex components are required that interact with other components in one single product; only organizational architecture is considered in understanding IOR performance, which will be explained further under resource exchanges.

Two dimensions in defining performance criteria for the exchange relationship have become widely fundamental. The first dimension includes the approaches and measures that are contingent on the adopted perspective: the buyer's perspective or the

supplier's perspective (Chen, Paulraj, & Lado, 2004). The second dimension focuses either on a single performance dimension or encompasses multiple performance dimensions (Paulraj, Lado, & Chen, 2008). From the approaches of the first dimension, this study measures the performance of the buyer-supplier relationship from the buyer's perspective. This is appropriate because in many industries it is the purchaser that defines the product and organizational architecture. Another reason for adopting the buyer's perception of supplier performance is to measure the degree of the end consumer's satisfaction regarding the buyer's relationship with the supplier, which is consistent with the approach by Cabigiosu and Camuffo (2012). From the approaches of the second dimension, in measuring exchange performance, this study takes into a single performance dimension. Hence, rather than focusing on financial performance, this study prefers the operational measure because such measures render more direct indications of the efficacy of the buyer-supplier relationship (Chen, Paulraj, & Lado, 2004).

3.6.2 Perceived Dependency

The formation of the inter-organizational relationship (IOR) begins with various antecedent conditions that are crucial for the formation of such a type of relationship. From the perspective of transaction cost economy (TCE), firms are motivated to enter an alliance due to the transaction costs resulting from small numbers bargaining. In other words, firms enter an alliance to minimize transaction costs that mainly result from drafting and enforcing contracts to safeguard themselves against opportunism. TCE alone does not justify the formation of an alliance. Hence, from the perspective of RDT, firms and organizations enter an IOR to acquire resources that are crucial for their survival and to reduce uncertainty (Pfeffer & Salancik, 2003). As firms are inescapably associated with external environments, a firm's need for scarce external resources creates dependence on its exchange partner. This dependence in turn motivates a firm to enter relational exchange with their exchange partner, as according to RDT firms take various actions to minimize environmental dependency. Entering an exchange relationship with the supplier firm, a buyer firm can ensure an uninterrupted supply of resources and reduce uncertainty.

Perceived dependency is defined as the extent to which a buyer firm is dependent on the supplier firm in terms of various resources. A buyer firm, in general, is dependent on the supplier in terms of product delivery, product supply, product information, price information, field staff assistance, financial assistance/loan counseling, equipment supply, marketing/merchandising programs, and so forth. The perceived dependency varies from industry to industry. In the case of the relationship between dealers and manufacturers, the dependency can go to the extent in terms of employee training, business acquisition assistants, financial planning, sales training, advertising, and retail credit assistants. As in the case of the construction industry, apart from product delivery, product supply, product information, and price information, the perceived dependency of the contractor on the material supplier can go to the extent in terms of financial assistance/loan counseling, equipment supply, and field staff assistant. It is evident that in many corporate networks, dealers that rely on the manufacturer as a sole supplier are more likely to be highly dependent (Stern & El-Ansary, 1982).

The prime purpose of an entering exchange relationship with an exchange partner or supplier firm is to exchange resources as agreed upon. Once the parties enter the exchange relationship, the exchange of resources must take place as anticipated. The IOR is often characterized by the intense sharing and joint development of financial resources, knowledge, and infrastructure in such a way as to enhance the performance of products and processes in a particular exchange, which goes beyond the traditional arms-length buy-sell contract (Lazzarini, Claro, & Mesquita, 2008). Not only are materials or components exchanged under the exchange relationship between buyer and seller, but information related to products, markets, business opportunities, information about the performance of the product, detailed information about delivery schedules and other supply services, and information about changes in volume, mix, and the sequencing of production are also exchanged once there exists a coupling of organizational architecture (Cabigiosu & Camuffo, 2012). However, to come to that phase where there exists an intense relationship between buyer and supplier, an antecedent condition to begin such an alliance is a must. Therefore, this study considers perceived dependency as an antecedent condition to begin the exchange relationship. When buyers or dealers commit to purchasing a high volume from one single supplier,

dependence on that supplier will be high (Provan & Gassenheimer, 1994). It is likely that in the construction industry, a contractor can depend on one single supplier to purchase materials that are significant to their construction business, or the contractor can rely on a sole supplier for the supply of equipment. When such dependence occurs, it is more likely that there will be intense resource exchange between parties this will lead to the sharing of information, which is crucial for enhancing exchange performance. Based on the stated literature, the hypothesis below is proposed.

Hypothesis 1: Perceived dependency has a significant positive correlation with the variable exchange of information.

In pursuit of scarce resources that are critical to their survival, firms, to reduce environmental uncertainty and have access to resources form inter-organizational relationships or a joint bilateral agreement with another firm (Hillman, Withers, & Collins, 2009). However, with alliance comes risk. It is likely that the partner may not show much commitment as agreed or may manifest opportunistic behavior. According to the transaction cost economy, humans are rationally bounded and opportunistic, as discussed above. Hence, a firm entering an exchange relationship or a strategic alliance must also face risks associated with such kind of relationship. To circumvent such risks from an alliance, partners enter a contractual agreement. A structural governance constituting both a formal and informal agreement is preferred. The following hypothesis is proposed, based on the above argument.

Hypothesis 2: Perceived dependency has a significant positive correlation with the structural governance mechanism (contractual and non-contractual agreements) and is a significant predictor of structural agreements.

3.6.3 Structural Governance: Structural Agreements

Once the party, to whom the buying firm would like to have a relational exchange, has been selected based on the perceived dependency, the next phase is exchange formalization. One of the main assumptions of TCE is that humans are opportunistic and possess guile. Hence, with the exchange relationship comes risks associated with the opportunistic behavior of an exchange partner. Although TCE primarily focuses on the occurrence of opportunistic behavior in the presence of transaction-specific assets, opportunistic behavior can also arise from other sources. It

is likely that during the process of negotiation, a firm can misrepresent its capabilities or resources (Akerlof, 1978). A firm can also sidestep its contracted obligations by not being able to live up to the promised expectation of knowledge contribution, effort, or other resources during the alliance (Klein, 1980). Likewise, in an exchange relationship between the contractor and a material supplier, an analyzed supplier intentionally refuses to measure up to the purchaser's expectations by concealing information about the product and prices, failing to make a scheduled delivery, or simply ignoring the purchase order.

Another important aspect of the alliance or exchange relationship is coordination. To achieve the alliance objective, i.e., enhance alliance performance, there must exist coordination among alliance members (B Loasby, 1996). In an inter-organizational relationship such as a general alliance, a strategic alliance, or an exchange relationship, coordination pools all kinds of resources, the division of tasks among partners, and the successive integration of the disseminated activities that are critical in the development of alliance value (Mitchell, Dussauge, & Garrette, 2002). However, due to a lack of mutual understanding between partners such coordination cannot be achieved (Faems et al., 2008). It also becomes important to develop appropriate linkages between alliance partners to achieve such coordination. Coordination does not merely suggest the pooling of resources or a division of tasks. Indeed, coordination can also include the exchange relationship where there exists a coupling of the organizational architecture that addresses the sharing of information to a greater extent. Information needs to flow between partners in the alliance at each partner firm; however, it may not be clear at the outset who those individuals are (Hoetker, 2005). Therefore, to circumvent opportunism, and to ensure coordination, two common approaches are proposed: the use of a structural governance mechanism and the use of a relational governance mechanism (Faems et al., 2008; Garbade, Omta, & Fortuin, 2016; Hoetker & Mellewigt, 2009).

Based on theoretical assumptions of transaction cost economy (TCE), structural governance assumes that the alliance partner or exchange partner tends to behave opportunistically. Relying on the concept of TCE, this mode of governance focuses on the individual alliance transaction or in other words the single transaction. The governing mechanism of this mode of governance is either complex contracts (Faems

et al., 2008) or structural agreements (Garbade, Omta, & Fortuin, 2016). Structural governance has also been referred to as a formal institution or formal governance, which constitutes the rules in the written agreement, as a governing mechanism, which are readily observable by the parties to a contract, and such rules are formally created to align the behavior of the parties in an exchange relationship with the objectives of the alliance (Zenger, Lazzarini, & Poppo, 2000). This study considers structural agreements as the governing mechanism of structural governance to justify its effect on other variables such as relational governance, resource exchange, and exchange performance.

Garbade, Omta and Fortuin (2016) have discussed two dimensions that have been used in operationalizing structural agreements or determining their power. First is the non-contractual agreement, which is operationalized as to what extent and in what detail are the structural aspects of the alliance discussed among the partners or between the exchange parties. Second, the extent to which these verbally committed agreements are included in the contractual agreement that is in a written document. Such formally written agreements are drafted so that they can be used in court cases (Grandori & Furlotti, 2010) to clarify financial obligations or other obligations that the parties in a contract owe each other. According to (Gulati, 2007), a structural agreement, a structural governing mechanism, can be categorized or structured into input-related agreements, output-related agreements, and risk-related agreements. For this study, the structural agreement is reduced to output-related (non-contractual) agreements, and risk-related agreements (contractual agreements). When entering an exchange relationship, the buyer and supplier must clarify what to expect from the exchange relationship, including the product, reasonable pricing, place and time of delivery, and payment terms. Therefore, such conditions are formally discussed under non-contractual agreements or output-related agreements. Finally, there is also a chance that the exchange relationship between buyer and seller may face various problems due to unforeseen reasons. This could involve conflicts between exchange partners related to pricing, products, and the delivery of goods. Conflicts are also more likely to occur due to external factors, such as the bankruptcy of either buyer or the supplier which result in the termination of the exchange relationship. Hence, these eventualities can be covered by risk-related, that is, contractual agreements.

3.6.4 Relational Governance: Relational Trust and Communication

The conceptual model in Figure 6 demonstrates the connection between two phases: exchange formalization and exchange execution. Hence this research attempts to show the relationship between structural agreements and relational governance. According to TCE, individuals or economic actors are assumed to be rationally bounded. In other words, it maintains that humans are rational actors and are goal-oriented in their decision-making process; however, due to their cognitive limitations, they are unable to realize their every goal. In the context of the inter-organizational relationship (IOR), when entering an exchange relationship, the contractual agreement drawn between the parties is generally assumed to be incomplete. The cognitive limitations of the economic actors preclude them from foreseeing every contingency that may arise during the exchange relationship. An exchange relationship or alliance falls under the "hybrid" form of governance according to Williamson (1991), and the "network" as coined by Powell (2012) is supported by neoclassical contract law. This means that rather than resorting to court settlements, the parties in exchange relationship are more likely to settle disputes among themselves, or by introducing a third-party arbitrator. Along with formal contracting, the exchange between the parties is also governed by relational norms of reciprocity. The parties in the exchange relationship resolve conflicts through norms of reciprocity (Powell, 2012), and the reputational concerns preclude the parties from displaying opportunistic behavior (Powell, 2012; Uzzi, 1997). Hence the gap created by incomplete agreements is generally filled by the relational governance between the parties in an exchange relationship, where trust acts as an alternative governance mechanism to align parties with their objectives.

This study is consistent with the arguments of Poppo and Zenger (2002), Tepic et al. (2011), and Garbade, Omta and Fortuin (2016) who argue that structural and relational governance complement rather than substitute each other. The complementary argument assumes that structural agreements to some extent are incomplete due to the cost of writing clauses, limitations of enforceability by courts, and the limitations of the individual's cognitive ability; it is not possible for parties in the exchange relationship to pre-specify all future contingencies in a contractual

agreement (Zenger, Lazzarini, & Poppo, 2000). Hence, both structural and relational governance are equally important in enhancing cooperation, as the gap left behind by the adaptive limits of a contract is filled by trust, a relational governing mechanism. However, trust between parties is not built overnight. Certain conditions and determinants are required to facilitate trust between exchange parties. A structural agreement is drawn between parties in the exchange to ensure the long-term commitment to the exchange and awareness of parties in the exchange relationship regarding opportunistic behavior. Thus, the contractual agreement that is drawn between parties to ensure bilateral adjustment indeed facilitates the development of a highly cooperative exchange relationship (Poppo & Zenger, 2002). Once the parties in the exchange relationship learn to cooperate or bring bilateral adjustment ushered by a contractual agreement, they develop trust which is significant for long-term commitment. Contractual and non-contractual agreements are both needed to provide an assurance platform on which relational governance mechanisms can flourish (Garbade, Omta, & Fortuin, 2016). Based on the arguments and perspectives discussed above, the following hypothesis is presented.

Hypothesis 3: There is a positive relationship between structural agreements and the relational governance mechanism. In other words, both contractual and non-contractual agreements are necessary to provide a domain where the mechanism of relational governance can thrive.

Relational governance, in this study, is defined as a perspective based on social embedded theory (SET), which assumes that economic actors tend to behave in a trustworthy manner, as their inter-organizational exchanges that are typically repeated are embedded in the structures of the social relationship. The exchange between parties in an alliance or exchange relationship is generally governed by trust, which is developed through a series of communications and reciprocity. According to this perspective, the enforcement of obligations, promises, and expectations develops through repeated communication and interaction that facilitates the norms of flexibility, solidarity, and information exchange (Poppo & Zenger, 2002). As the exchange relationship falls under the hybrid mode of governance, the parties in such a relationship enjoy a higher extent of flexibility as compared to that of the hierarchy, which helps them to adapt to unforeseeable events. Flexibility provides a ground for solidarity and

such harmony between exchange parties promotes a bilateral approach to problem-solving, developing a commitment to combined action through mutual adjustment. Once the parties in the exchange develop flexibility and solidarity, they become more comfortable in sharing private information, which is crucial in achieving short-term and long-term goals. Such relational governance that is developed from continuous social interaction and norms can mitigate the exchange hazards anticipated by formal agreements. Such exchange hazards are related to transaction-specific assets, opportunistic behavior, difficult performance measurements, and uncertainty. The norms of social reciprocity that accompany relational governance engender an incentive to continue the relationship by investing in transaction-specific assets. Such reputational concerns created by social norms avoid opportunistic behavior. The expectation of continuity of relational exchange dwarfs the need for the precise measurement of performance. Lastly, the norms of reciprocity provide flexibility to cope with the uncertainty that may arise in the exchange relationship.

The governing mechanism used in relational governance to alleviate hazards that may arise in the exchange relationship is both economical and sociological. It is economical because the parties in the exchange relationship encourage cooperation in the present, as they anticipate future exchanges. It is sociological because norms such as trust and reciprocity are developed from prior ties (Uzzi, 1997) and a series of communications once the exchange formalizes (Garbade, Omta, & Fortuin, 2016; Hoetker & Mellewigt, 2009). Trust is proposed as a governing mechanism (Faems et al., 2008; Garbade, Omta, & Fortuin, 2016; Hoetker & Mellewigt, 2009) as a social norm that accompanies relational governance to facilitate smooth cooperation between buyer and seller such as the exchange of resources, which leads to the enhancement of exchange performance. Trust is defined as an attribute of the party in the exchange relationship that would prefer to avoid opportunistic behavior and believes that the other party in the relation has the disposition to behave in a trustworthy manner (Lyons & Mehta, 1997). Trust is defined as the confidence and willingness of the firm to rely on an exchange partner who has the ability and motivation to produce positive outcomes for the organization (Moorman, Zaltman, & Deshpande, 1992). Trust is conveyed through faith, reliance, belief, or confidence among the alliance partners and is viewed as the willingness to forego opportunistic behavior (Nooteboom, 1996). However, trust

between parties is not developed overnight. It takes a series of interactions and a successful history of prior exchange relationships to build trust. A history of successful prior ties both direct and indirect is an important source of information about reliability and the capabilities of both current and potential partners, and such information not only helps firms to learn about new opportunities but also enhances trust in current and potential partners (Gulati, 1995b). The trust in the current partner is also developed through a series of interactions. During the exchange formalization phase, firms tend to interact with their current partner regarding various agreements that need to be formalized; hence once they begin to interact with each other they tend to share information which is useful in building trust. Repeated interaction, a social-based mechanism, that can be achieved through face-to-face meetings can enhance open communication and the sharing of information, trust, dependence, and cooperation (Hoetker & Mellewigt, 2009). A buyer firm in the expectation of a long-term relationship with its analyzed supplier tends to communicate more through various forms of social-based mechanisms. They can conduct face-to-face meetings or firm expert committees, or they can organize informal gatherings. Such interaction helps in building trust and empathy, which are a powerful source of relational rent that generates utility for both parties in the exchange relationship.

Trust is defined “as the belief that an exchange partner would not act in self-interest at another’s expense and appeared to operate not like a calculated risk but like a heuristic – a predilection to assume the best when interpreting another’s motives and action.” (Uzzi, 1997). This heuristic quality in the exchange relationship helps to speed up decision-making and in conserving cognitive resources. Although the heuristic technique is an approach to confronting problems or uncertainty using shortcuts or trial and error methods; Uzzi (1997), in his study, the heuristic character of trust was identified as helping make quick decisions and processing more complex information. This resulted in flexibility in the exchange relationship, resulting in the ease of communication between the buyer and seller firms. The buyer or manufacturer could easily communicate to their material supplier as they have been providing each other with favors or have also been giving their exchange partner preferred treatment in a job queue or placing an order before it was needed. Such reciprocity is not possible in arm’s-length ties. Thus, trust as an alternative governance mechanism, which is a

significant component of exchange relationships under the hybrid form of governance is important as it enriches the firm's opportunities, access to resources, and flexibility in ways that are impossible to mimic in the arm's length contract.

3.6.5 Resource Exchange

The resource dependency perspective postulates that firms and organizations enter into an inter-organizational relationship to have access to resources that they cannot solely create or manufacture, as indicated earlier. Likewise, a buyer firm enters an exchange relationship with a supplier firm in the expectation that it will continue to receive goods and services from the supplier as per the terms and agreement. Therefore, in the exchange execution phase, resources related to information and materials have to be exchanged. Information exchange refers to the extent to which information is related to the product, price, demand forecasts, construction plans, the total cost of construction, and key financial indicators such as turnover, cash flow, and profitability ratio. Material exchange refers to the extent to which materials related to the construction are exchanged.

Unlike the arm's length contract where price plays a sufficient statistic in conducting the exchange between parties, in an exchange relationship, along with price, even relational governance comes into play in conducting a material exchange. As the buyer-supplier exchange relationship is a "hybrid" form of governance as coined by Williamson (1991), and as the "network" according to Powell (2012), the social process facilitated by such forms of governance enhances the resource exchange between parties in relational contracting. In an exchange relationship where the economic exchange between economic actors is embedded in the structures of the social relation, trust, which is created out of reciprocity, not only facilitates the exchange of price and quantity data, but private information related to business; and future opportunities are also shared among parties, which is quite difficult to emulate in arm's length ties (Uzzi, 1997). Once the parties are in embedded ties or the exchange relationship, trust enables parties to learn about their exchange partner's nature of business, which helps them to make proactive decisions in terms of product preparation and delivery according to seasonal demand. Additionally, reputational concerns, which are important for firms to

stay in the network, make firms aware of the repercussions of showing opportunistic behavior in the pursuit of short-term gains.

Often in arm's length ties, the relationship between buyer and supplier is vertical as the price is a sufficient statistic, and due to small numbers of bargaining, the exchange is more like "take it or leave it". However, in embedded ties, there exists a horizontal relationship between parties, as trust as a relational mechanism is an important factor for accessing resources through the coupling of organization architecture. This coupling refers to the extent to which firms are involved in the design and production of the components that make a product communicate and exchange business and technological information, coordinating their decisions, actions, and efforts. In the construction industry, it becomes important for contractors to get involved with material suppliers regarding the design of the product that can be used in the construction of all kinds of infrastructure. The exchange of technological information between parties helps contractors achieve suitable tools and equipment that are crucial for construction. The coordination of decisions not only helps the contractors and suppliers to bring quality to the products and the construction job but also supports resolving conflicts arising out of misunderstanding. The coordination of actions between parties helps material suppliers to prepare goods proactively to meet seasonal demands so there is no shortfall of goods. The coordination efforts help both the contractor and material supplier to understand their business, the nature of the construction, and the goods and services required for such kind of business. It also helps parties to realize the possible defects that can occur in the products beforehand. Such kinds of features and characteristics mentioned above are only possible in embedded ties and are difficult to replicate in arm's length ties. Hence, based on the theories and perspectives following hypotheses are proposed.

Hypothesis 4a: In a successful buyer and supplier relationship structural governance is positively related to resource exchange.

Hypothesis 4b: In a successful buyer and supplier relationship relational governance is positively related to resource exchange.

For this study, as already mentioned under the dependent variable, two dimensions are considered in assessing exchange performance. The first dimension

concerns the approach of assessing exchange performance from either the buyer's perspective or the supplier's perspective, which is consistent with the approach by Chen, Paulraj and Lado (2004). For this study, for the assessment of the exchange relationship, a buyer's perspective is considered because, in many industries as well as in construction, it is the buyer that defines the product and organizational architecture. Another reason for adopting the buyer's perception of supplier performance is to measure the degree of the end consumer's satisfaction regarding the buyer's relationship with the supplier, which is consistent with the work of Cabigiosu and Camuffo (2012). The end consumers in the construction industry are generally the public, and both government and private institutions. Hence, their satisfaction with the product that they paid for largely depends upon the materials used by the contractor. These materials are supplied by the supplier in a relationship with the contractor. The second dimension concerns either the multiple performance measures or single performance measures. This study takes the approach of single performance measures and considers operational measures rather than financial measures, as such measures render a more direct indication of the efficacy of the buyer-supplier relationship (Chen, Paulraj, & Lado, 2004).

Buyer's satisfaction, during the exchange performance phase, is defined as the extent to which the buyer is satisfied with the supplier relationship performance in terms of information sharing and the quality of the products supplied. It is widely accepted that information sharing between buyers and suppliers reduces errors in products and performance, thereby enhancing quality, time, and customer responsiveness (Novak & Stern, 2008). The relational rents that are developed through information sharing between buyer and supplier (Baker, Gibbons, & Murphy, 2002) create a positive environment to solve problems, improve product quality, reduce customer response time, and minimize costs through operational efficiency (Vickery et al., 2003). Further, the amount of quality information shared between buyer and supplier has a positive effect on the exchange relationship as perceived by the buyer (Cabigiosu & Camuffo, 2012). The quality information shared between the contractor and material supplier not only reduces errors, and saves time and costs, but at the same time it also generates relational rent, which cannot be achieved in the arm's length contract. Therefore, the following hypothesis is proposed based on the above perspective and findings.

Hypothesis 5: The extent of the information exchanged between contractor and material supplier is positively related to exchange performance measured through the buyer's satisfaction and collaboration.

3.7 Conclusion

In today's business scenario, it has become important for firms and organizations to enter inter-organizational relationships to develop new products, share ideas and information, and seek resources that are not easily available. Such strategies help organizations to survive harsh environments and remain competitively ahead. However, arm's length ties, which are governed by a market form of governance, allow parties in a contract to enjoy full autonomy and choose any parties for trading, as price plays a sufficient statistic. However, such ties come with limitations. Under arm's length ties, due to small numbers of bargaining firms and organizations are unable to invest in transaction-specific assets. Due to a lack of proper governing mechanisms, uncertainty and conflicts can immediately terminate a contract. Under the exchange relationship, where economic actions are embedded in the structure of social relationships, the exchange parties are helped in several ways. First, trust is a governing mechanism generated through a social process that enables the parties in the exchange relationship to further invest in the transaction-specific asset. Second, trust facilitates flexibility in communication which enables the exchange parties to communicate more frequently. Third, trust brings about coordination among parties in various exchanges. With trust, parties in the exchange relationship are more comfortable in sharing private information which is useful in reducing errors, and time, in making quick decisions, and in taking proactive actions. Although trust is the essence of embedded ties, such ties do not come without risk. There is a considerable amount of risk associated with the exchange relationship, and such risks are associated with the contractual hazards resulting from opportunistic behavior and shirking. However, structural agreements drawn up front align the exchange parties to goals and the objectives of the alliance. Further, reputational concerns, as firms in embedded ties are involved in a network, are aware of parties in transactions regarding the consequences of opportunistic behavior.

The conceptual framework developed from the dynamic evolution alliance perspective shows the significance of both structural and relational governance in exchange performance. Indeed, this research argues that structural and relational governance complement rather than substitute each other. The conceptual model helps in understanding how various determinants, such as perceived dependency, structural agreement, relational governance, and exchange of resources, develop embedded ties between the organizations through the dynamic perspective. Further, the research recommends a framework to understand the various kinds of inter-organizational relationships such as the public-private project (PPP) which become phenomenal in Nepal.

CHAPTER 4

METHODOLOGY

This chapter outlines the research setting, scale, and measures of the construct, the sampling frame, and the details on the sample and respondents considered to test the proposed hypotheses and to show the relationship among the variables. It further exhibits the development of the questionnaire and how the construct is planned to be operationalized, followed by an outline of the survey procedure, including the steps considered to facilitate the response rate.

4.1 Research Design

The survey was carried out with a cross-sectional design where data were collected at one time. This study applied the quantitative method which uses statistical tools for testing the hypotheses. The quantitative method, which is strictly involved in statistical and mathematical analysis was implemented using the SPSS program and the AMOS program to analyze the data to confirm the findings of the quantitative analysis. Specifically, the hypotheses were tested empirically using the analysis of moment structure (AMOS) in the form of a causal relationship among the constructs and path analysis.

The research towards testing the framework was conducted using mixed mode surveys through an online administered questionnaire (using Google Forms) and in the personal survey, that is the questionnaire was handed out to be responded to personally, across two phases, which aimed to provide suitable results for this dissertation. The probability-based sampling method was utilized with the survey responses to form the sampling frame. The mixed mode was also considered to enhance the response rate (Dillman, 2011). A questionnaire survey provides an accurate representation of factual reality through the effective administration of the research instrument and this is the frequently-used descriptive design in strategy research (Gatignon & Xuereb, 1997). Its

advantage lies in having more information collected from diverse respondents which could significantly be economical when you factor in the amount of information it gathers (Kerlinger, Lee, & Bhanthumnavin, 2000). What is pertinent is that often research on the combined interplay of structural governance and relational governance has been of a conceptual nature. This survey-based research aims to provide a clear interpretation and understanding concerning the significance of the adaptability of structural and relational governance in terms of exchange performance, the alliance process determinants and interactions, and the organization consequences taken from the viewpoint of top management in the construction industry towards understanding the organizations' strategic decision-making process. The use of a perceptual measure vis-à-vis the objective measures could indeed be regarded as reliable indicators (Pearce, Freeman, & Robinson Jr, 1987). The operationalization of this research in essence captures the perspectives and beliefs of management in their strategic decision-making. A questionnaire does bring certain disadvantages, with the most significant issue being the typically low response rate. This was countered with the methods promoted by (Dillman et al., 2008), - discussed later in the dissertation. We further move on to detail the methodology that is proposed in the data collection with an explanation of the construct measured in this research.

4.2 Population and Sampling Procedure

To test the hypotheses, this study has chosen the construction industry for the data collection, as already stated. Hence the unit of analysis is construction companies at the organization level. The list provided by FCAN (Federation of Contractors' Association of Nepal) constitutes 270 construction companies, out of which 143 are class "A" construction companies, 40 are class "B" construction companies, 35 are class "C" construction companies, and 52 are class "D." These companies are the prominent ones in Nepal, and are involved in various government projects.

The sampling approach was aimed at achieving a random sample that effectively represented the major constituents of the population, which was expected to help this study provide estimates of the perceptions and outcomes of the larger population. The respondents that were targeted were top management, namely CEOs,

chairpersons, presidents or vice presidents, and operational and sales managers. Typically, based on the conceptual framework the respondents were expected to know the organization well, its functions, and departments, thereby being aware of the organization's goals and strategies, the characteristics of their organization and internal processes, and importantly having performance information. Towards ensuring this balanced view the respondents were limited to the individuals listed above from the upper management of the organization. The organizations were predominantly from Kathmandu, and in the case of insufficiency, the survey was likely to expand to neighboring cities of Katmandu, namely, Bhaktapur, and Patan. These construction companies are primarily focused on infrastructure and real estate development. Infrastructure development is inclusive of all kinds of roads, highways, bridges, irrigation, hydropower plants, government buildings, private corporate office buildings, and other public utilities. Real estate development includes the construction of shopping malls, multiplex cinema theaters, hotels, resorts, gated residential areas, condos and apartments, and individual houses. Both infrastructure and real estate development by construction companies make a significant contribution to the national GDP. The member organizations under the Federation of Contractors' Association of Nepal (FCAN) were mailed and were directly invited to participate with the consent of the chambers. The overview of the population is provided in table 4.1. The organizations were approached in two waves. First, the organizations were mailed questionnaires and they were requested to submit their responses, and in the second wave, those that failed to respond were directly contacted individually to enhance the response rate. First reminder e-mails were sent two weeks after the initial survey, and follow-ups through cold calls were diligently performed during the second wave, which was scheduled across the data-collection period of a span of four months. The expected response rate for both the first and second phases is listed in the table below.

Table 4.1 Population of Study (Organization Level)

Construction Companies	**Population**
Class A	61
Class B	28
Class C	29
Class D	58
Total	**176**

4.2.1 Sample Size

The need for having an adequate sample is important in terms of having both valid and reliable results. The confirmed population of 270 requires a sample size of 159 at a 95% confidence level and a 5% margin of error. Additionally, the sample size, though small, would need to have a minimum number of samples for analysis utilizing the structure equation model, as outlined by Bollen (1989). The sample size under consideration needed to be in line with the number of parameters. Therefore, the sample amount was expected to be proportional to the parameter number. Lindeman, Merenda and Gold (1980) have suggested that the ratio between the sample number and parameters is considered to be 20:1. A total number of 176 completed responses were achieved with very few missing values.

4.2.2 Data Collection

Towards testing the proposed framework, the data collection was essentially planned to be collected in two phases. The first phase entailed a small pre-test of the questionnaire to assess its clarity, structure, length, and ease of use. A considerable number of business associates and experts within the network were requested to participate. They were asked to complete the survey online and were provided with a hard copy of the questionnaire and then interviewed with questions based on the content, length, and language used and the clarity of the questions and answers. On the basis of the feedback, the survey instrument was revised prior to its use in the final phase, and this helped to enhance the face validity of the questionnaire. The second phase of the data collection was conducted in two waves, which constituted visual and

aural communication to assure better response rates. The first was conducted through emails, providing the option of both the online survey and the questionnaire provided as an attachment. The second wave targeted the non-respondents, which included approaches such as follow-ups with telephone calls to seek of responses to the survey, and as a reminder which was designed to help enhance the response rate (De Leeuw, 2005). The visual method is the basic approach that is utilized with the online survey. The follow-up was reinforced through telephone reminders in the second wave, which was expected to ensure avoiding the possibility of measurement differences. This helped to enable data cleanup and to facilitate a better response.

4.3 Characteristics of the Instruments

This section deals with the scales that were used or considered. The section also outlines the operational definitions of the variables and their respective measures with their scales.

4.4 Scale Usages

A 7-point Likert scale was proposed across all of the constructs mentioned below for eliciting the responses from the executives. This made it convenient for all the respondents to understand to enhance the response rate and effectively analyze the variance. To ensure the continuity and fluidity of the instrument, this format was maintained throughout and provided a good understanding of the variance. Each of the scales is detailed below.

4.5 Definitions and Construct Measures

The variables are clearly defined in Table 4.2 in order to help understand them in accordance with the literature review towards having the same understanding which formed the basis for adapting the questions. This enabled the respondent to be in line with the researcher's understanding of the question and helped to enable the receipt of valid responses. The construct measures were then subsequently outlined.

4.5.1 Perceived Dependency

Perceived dependency was selected because it is an antecedent condition for firms and organizations to enter an exchange relationship with another firm. It is defined as the awareness of the need for resources to manufacture products or services that an organization cannot solely generate. Once the buyer firm realizes its need for a particular resource to survive in the environment and to stay ahead of the competition, the organization is more like to solely rely on the supplier that possesses such resources. This variable has been tested before by Skinner, Donnelly Jr and Ivancevich (1987) to show the relationship between the dealer's dependency and power. RDT postulates that firms and organizations enter an IOR, such as a buyer-supplier exchange relationship, to access resources that they cannot develop on their own. Hence, this research considers this variable to show its relationship and impact on the structural agreement and the exchange of resources. The scale was adapted and slightly modified for this research based on the characteristics of the industry that this research proposes to undertake. This scale format was utilized to develop the questionnaire (table 4.2).

Table 4.2 Variables and Definitions

S.N.	Variables	Definition	Measurement	Questionnaire
1	Perceived Dependency	The organization's dependence on a vendor or manufacturer as the sole supplier of resources therefore is highly dependent (Skinner, Donnelly Jr, & Ivancevich, 1987).	- Reliance on product delivery - Reliance on product supply - Reliance on product information - Reliance on price information - Reliance on field staff assistance - Reliance on financial assistance - Reliance on loan counseling - Reliance on equipment supply	- The extent to which the organization feels that they rely upon the supplier/manufacturer for product delivery - The extent to which the organization feels that they rely upon the supplier/manufacturer for product supply - The extent to which the organization feels that they rely upon the supplier/manufacturer for product information - The extent to which the organization feels that they rely upon the supplier/manufacturer for price information - The extent to which the organization feels that they rely upon the supplier/manufacturer for field staff assistance - The extent to which the organization feels that they rely upon the supplier/manufacturer for financial assistance - The extent to which the organization feels that they rely upon the supplier/manufacturer for loan counseling - The extent to which the organization feels that they rely upon the supplier/manufacturer for equipment supply
2	Structural governance: Structural agreement	The organization's ability to circumvent an opportunistic behavior and ensure coordination with the exchange partner	- Agreements about delivery and after-sales services - Agreements about pricing and commission	- The extent of the agreements made about delivery and after-sales services at the beginning of the exchange relationship

S.N.	Variables	Definition	Measurement	Questionnaire
		through mechanisms such as structural agreements or contractual agreements (Garbade, Omta, & Fortuin, 2016)	- Agreements about confidentiality - Agreements about procedures for resolution of conflicts - Agreements about early termination of the exchange relationship	- The extent of the agreements made about pricing and commission at the beginning of the exchange relationship - The extent to of the agreements made about confidentiality at the beginning of the exchange relationship - The extent of the agreements made about procedures of resolution of conflicts at the beginning of the exchange relationship - The extent of the agreements made about early termination at the beginning of the exchange relationship
3	Relational governance: Frequency of communication	The organization's ability to communicate with their most important supplier in terms of face-to-face, telephone, and e-mail contacts (Garbade, Omta, & Fortuin, 2016)	- Frequency of telephone contact made with the most important supplier - Frequency of email contact made with the most important supplier - Frequency of face-to-face contact with the most important supplier	- How often do you have telephone contact with the most important supplier? - How often do you have email contact with the most important supplier? - How often do you have face-to-face contact with the most important supplier
4	Relational governance: Trust	Relational trust includes the positive expectation of the buyer organization towards the supplier organization that the supplier will commit to its obligation as promised (Garbade, Omta, & Fortuin, 2016)	- Promises kept by the supplier - No excessive requests made by the supplier - Sincerity of the supplier - No adverse effect of supplier future decision and action - The supplier's important decision and welfare or interest	- The most important supplier always did what he promised. - Our organization believes that the most important supplier will not make excessive requests of us. - Our organization believes that the most important supplier is being sincere. - Our organization believes that the most important supplier's future decisions and actions will not adversely affect us.

S.N.	Variables	Definition	Measurement	Questionnaire
			- Dependence on the supplier's support	- When making important decisions, the most important supplier cares about our welfare or interests. - When it comes to things that are important to us, we can depend on our most important supplier's support.
5	Ease of communication	The organization's ease of access to another organization to achieve information that has been anticipated (Garbade, Omta, & Fortuin, 2016)	- Ease of access to everyone at the supplier's organization - Risk of leaking confidential information	- It is very easy to speak with everyone at the supplier's organization whenever we feel it is necessary, regardless of rank or position - The risk of leaking confidential information is…(1=very large to 7 = very small).
6	Resource Exchange	This is defined as the vital information exchange between buyer and supplier which is essential for survival (Cabigiosu & Camuffo, 2012)	- Information concerning current and new construction projects - Information concerning inventory level - Information concerning project plans/ demand forecast - Information about attributes and performance parameters of the projects - Information about the cost breakdown structure of the projects in hand - Information about the delivery schedules and other supply services at construction sites.	- You frequently exchange with your most important supplier detailed information concerning current and new construction projects. - You frequently exchange with your most important supplier, detailed information concerning inventory level. - You frequently exchange with your most important supplier, detailed information concerning project plans/demand forecasts. - You frequently exchange with your most important supplier, detailed information about the attributes and performance parameters related to your projects. - You frequently exchange with your most important supplier detailed information about the cost breakdown structure of the projects in hand.

S.N.	Variables	Definition	Measurement	Questionnaire
				- You frequently exchange with your most important supplier detailed information about delivery schedules and other supply services at construction/project sites. - You frequently exchange with your most important supplier detailed information about project capacity and its level of saturation. - You frequently exchange with your most important supplier detailed information about changes in volume, mix, and sequencing at your construction/project site. - You frequently exchange with your most important supplier detailed information about key financials such as turnover, cash flows, and profitability ratios.
7	Exchange relationship performance: Buyer's satisfaction and collaboration	Two sub-variables are considered while measuring the dependent variable. The buyer's satisfaction is defined as the extent to which a buyer perceives its most important supplier has met all the criteria in terms of product quality, delivery, price, and services (Cabigiosu & Camuffo, 2012).	**Buyer's satisfaction** - The products and other materials supplied by the supplier - Process technology used by the supplier - Quality of the supply services of the supplier - Price of products/materials purchased from the supplier - Flexibility in customization and modification - Flexibility in batch size - Order to delivery lead time by the supplier	**Buyer's satisfaction** - The products and other materials supplied/produced by your supplier concerning quality and durability are better than other suppliers in the market. - To manufacture the materials/product your supplier uses process technology that is more advanced than that of other suppliers in the market - You are very satisfied with the quality of the supply services of your most important supplier (on-time delivery etc.). - You are very satisfied with the price of products/materials purchased from your

S.N.	Variables	Definition	Measurement	Questionnaire
		Collaboration is defined as when two or more firms come together to develop mechanisms such as structures, processes, and skills for bridging organizational and interpersonal differences (Powell & DiMaggio, 2012).	**Collaboration** - Loyalty to the supplier - Face-to-face planning and communication with the supplier. - High-level corporate communication on important issues	supplier because it is lower than the price offered by other suppliers in the market. - The most important supplier is very flexible concerning the customization or modification of the materials. - The most important supplier is very flexible concerning batch size. - You are very satisfied with your most important supplier's order regarding delivery lead time **Collaboration** - Your organization is loyal to the supplier. - Your organization has frequent face-to-face planning/communication with your supplier. - There is high-level corporate level communication on important issues with the supplier.

4.5.2 Structural Agreement

Structural agreement is defined as the extent to which organizations take measures to circumvent risks arising out of contractual hazards such as the possibility of opportunistic behavior from the exchange partner. Measures are also taken to ensure that the exchange partners' actions are aligned with the alliance goal. The scale for operationalizing this variable was adapted from Garbade, Omta and Fortuin (2016). Two dimensions that determine the efficacy of the structural agreement were used in constructing the scale. The first was the extent to which details were the structural aspects of the exchange relationship discussed among buyer and seller agreed upon (non-contractual agreements). The second was the extent to which they included them in a formal exchange relationship contract (contractual agreement) that could be used in a court case to decide who owes what to whom, or in the case of results who is the owner of the results. The adapted scale was further slightly customized to fit the analyzed industry (table 4.2)

4.5.3 Frequency of Communication

The frequency of communication was selected as one of the significant governing mechanisms of relational governance to show its impact on trust. As relational governance postulates that the economic action of rational individuals is embedded in the structure of social relationships, there exists frequent communication between exchange partners. This is defined as the extent to which the buyer and supplier firm communicate with each other via face-to-face, telephone, and email contact. This variable was measured from the perspective of social embedded theory, and the scale was adapted from Garbade, Omta and Fortuin (2016) and was slightly modified to fit the purpose of this research (table 4.2)

4.5.4 Trust

Trust is defined as another predominant governing mechanism of relational governance where the buyer organization has positive expectations towards the supplier organization where the supplier will commit to its obligation as promised. This variable was selected, because according to SET, trust is developed from a series of communications, and it has a positive impact on exchange relationship performance.

This scale was adopted from Garbade, Omta and Fortuin (2016) and Huang et al. (2016) to show its effect on ease of communication, and was slightly customized to fit the purpose of the research (table 4.2).

4.5.5 Ease of Communication

The privilege that one receives from another organization in terms of engaging in communication or even sometimes overstaying one's welcome whenever one feels that is necessary. In other words, the easement or comfortability that has been provided by the seller organization to the buyer organization to communicate whenever needed. The scale of Garbade, Omta and Fortuin (2016) was utilized to measure the variable and has been slightly modified to fit the purpose of this study (table 4.2).

4.5.6 Resource Exchange

The resource exchange between buyer and seller is defined as the coupling of organization architecture, which refers to the extent to which firms are involved in the design and production of the components that make a product communicate and exchange business and technological information, coordinating their decisions, actions, and efforts. From the RDT perspective, once the organization enters an IOR they are expected to exchange resources that are essential for survival. The scale of Cabigiosu and Camuffo (2012) was utilized to measure the effectiveness of this variable with slight modifications to fit the scope of this research (table 4.2).

4.5.7 Exchange Relationship Performance

Exchange relationship performance is defined as the extent to which the buyer perceives that its most important supplier has met all of the criteria in terms of product quality, delivery, price, and services. Two dimensions are fundamental in defining the performance criterion in the exchange relationship. First, approaches and measures are the perspectives adopted from previous research. These perspectives are the buyer's perspective, the supplier's perspective, or the supply-chain perspective. Second, measures can focus either on single performance measures or can constitute multiple performance dimensions. This research measures the exchange relationship performance from the buyer's perspective, which is appropriate because the

construction industry being investigated is largely defined by the buyer. Finally, this research prefers operational measures to financial measures, as they provide a more direct indication of the effects of the buyer-supplier exchange relationship. The scale was adopted from Cabigiosu and Camuffo (2012) and was slightly modified to fit the characteristics of the analyzed industry (table 4.2).

4.6 Data Analysis Method

For the research data analysis, several statistical analyses were conducted using the statistical package SPSS 2.3 version and SPSS AMOS. Descriptive statistics were used to show the exact number of respondents, and their demographic characteristics, and to show the total mean and standard deviation of all the research variables. For data preparation, normality tests, reliability tests, and multicollinearity and linearity tests were conducted. For the factor analysis, confirmatory factor analysis (CFA) was conducted. For the evaluation of the hypothesized model, path analysis was conducted. Finally, for testing the hypotheses, structural equation modeling (SEM) was conducted.

Before conducting a multivariate statistical analysis, the continuous variables must be screened, as a preliminary step. The normality of variables can either be assessed by statistical methods or by graphical methods (Pallant, 2020). Two statistical methods, skewness, and kurtosis, were applied to test the normality of the continuous variables.

The scales used in this study have been already used in previous studies. However, as they were applied to different industries, it was deemed important to have a reliability test of all the measures. This study relies on Cronbach's alpha coefficient, a commonly used indicator, to test the reliability of the scale items. The closer is the Cronbach's alpha coefficient value to 1.0, the more reliable is the scale. Hence, the cut-off value of 0.7 by DeVellis and Thorpe (2021) was specified, so the alpha value should not be below 0.7.

To ensure that there exists no multicollinearity among two or more predictor variables, two statistical techniques, VIF and Tolerance, were used. VIF stands for inflation factor value. According to Hair Jr Joseph et al. (2009), to ensure that there occurs no multicollinearity among manifesting variables, the value of VIF should not exceed 10. Likewise, the tolerance value above 0.1 indicates the nonoccurrence of

multicollinearity. Both statistical techniques are elaborated in the next chapter. As for the linearity test, a parametric statistic called Pearson correlation was used. A separate bivariate analysis between variables was performed and there was a significant correlation between the variables. Correlation analysis helps to analyze and discover the association between the two latent variables or whether the two variables of interest have an observed covariance. The correlation coefficient denoted by 'r' could range from -1 to +1. A perfect positive correlation is shown by the correlation coefficient r being +1, and an r of -1 indicates a negative correlation, and in the case in which it is 0 it suggests that no relationship exists between the two variables can be considered. This research hypothesizes that there will be a significant positive correlation with perceived dependency, structural agreement, frequency of communication, trust, ease of communication, resource exchange, and the dependent variable of exchange relationship performance.

For the factor analysis, this study has conducted Confirmatory Factor Analysis (CFA). What differentiates from CFA from Principal Component Analysis (PCA) is that CFA is associated with model testing, whereas PCA is associated with model development. CFA is used more in testing whether the correlations among the variables are consistent with a hypothesized factor structure, whereas PCA is used in identifying the underlying processes that can produce correlations among variables. Despite its sophistication, CFA was deemed important to apply in this study, as this study focuses more on model testing than on model building. Hence, exploratory factor analysis (EFA) was skipped. Besides, all of the measuring variables that were proposed to be used in this study were already tested. Further, this study, to, test the proposed hypotheses, has used structural equation modeling (SEM). CFA is more often referred to using SEM.

A path analysis for the both first-order CFA model and the proposed conceptual model was conducted, as it was found best suited for determining the factor loadings on each latent variable as well as examining the causal paths amongst the variables that were hypothesized. To find the path coefficient and their model fit, maximum likelihood estimation (MLE) was selected. MLE is found to be a popular method for estimating model fit for two main reasons. First, under MLE all of the parameters within the model are computed together; it is an iterative process where the estimates are

continuously calculated. Second, MLE takes into account the error terms of all the different exogenous variables. To confirm the goodness of fit, the model's path was tested using MLE. As SPSS AMOS provides arrays of indexes to confirm goodness of fit, only those appropriate for this study were taken into consideration.

The first index that was taken into account was the CMIN statistic, which stands for 'minimum discrepancy.' Often referred to as x^2, it represents the discrepancy between the unrestricted sample covariance matrix S and the restricted covariance matrix $\Sigma(\theta)$ and, also represents the likelihood test statistic. Another index from the same set of fit statistics that was taken into consideration was CMIN/DF. It stands for minimum discrepancy by function by degrees of freedom. This index was considered as this fit statistic addresses the limitation of x^2.

From the second set of fit statistics, NFI, CFI, RFI, and IFI were taken into account. NFI stands for normed fit index, and CFI stands for the comparative fit index. The values for both the NFI and CFI range from 0 to 1.00 (Byrne, 2013). RFI stands for the relative fit index. As it is derived from NFI, like NFI and CFI its value also ranges from 0 to 1.00 (Byrne, 2013). IFI, which stands for incremental fit index, addresses the parsimony issues. The value ranges from 0 to 1.00, and a value close to .90 indicates that the model is well-fitted.

The third set of fit statistics that includes fit indexes such as PRATIO and PCFI was found to be appropriate. Because PRATIO, which stands for parsimony ratio, addresses the issue of model parsimony. The value for both PRATIO and PCFI ranges from 0 to 1.00. From the third set of fit statistics, the RMSEA index was found to be more suitable. RMSEA stands for root mean square error. This fit index takes the error of approximation into account and verifies how well the model fits the population covariance matrix with unknown but optimally chosen parameters, if available (Byrne, 2013). A value less than .05 indicates a good fit and a value as high as .08 represents errors of approximation in the population (Browne, 1993).

4.7 Ethical Consideration

The standard ethical guidelines of Fontana and Frey (2003) were strictly followed for this study:

1) The respondent's identity was not to be revealed. Answers to the survey were strictly confidential and all answers across all survey participants were aggregated without identifying individuals or their businesses. Only general information such as demographic details was collected.

2) The respondent was never harmed or disturbed physically, emotionally, or in another way.

3) Institutional approval was duly obtained before beginning the data collection.

4.8 Conclusion

This chapter described the scale and measures used for the constructs, and the study population, and outlined the questionnaire development and how the constructs were operationalized, followed by the survey procedure. The data analysis techniques and how the hypotheses of the study will be tested were elaborated, and reliability tests using Cronbach's alpha for composite validity to confirm the validity were shown. Chapter 5 enumerates the analysis of the data and the results obtained.

CHAPTER 5

RESEARCH RESULT

This chapter details the findings from the quantitative analysis. Statistical package SPSS was used to determine results from the collected data, as mentioned. This chapter aims to manifest the empirical observation by scrutinizing the relationship between structural governance and relational governance. The presented evidence answers two research questions. First, it aims to show how structural governance such as formal contracting provides a domain where relational governance such as trust can thrive. Second, it shows how perceived dependency, the various mechanisms of both structural governance and relational governance, can lead to a successful inter-organizational relationship between construction companies and material suppliers.

To describe the results in an elaborative manner, this chapter is structured into five sections. The first section details some basic statistical analyses such as frequency, percentage, maximum, minimum, mean, and standard deviation. The second section exhibits other preliminary analyses such as the screening of outliers, the checking of normality, multicollinearity and linearity tests, and reliability tests. The third section deals with the validity of the items, under which confirmatory factor analysis is performed to test whether the manifesting variables measure the hypothesized latent variables and constructs and confirm the fit of the proposed model. The fourth section evaluates the proposed conceptual framework. Finally, the fifth section elaborates the hypothesis testing, in which SEM is employed to test all six hypotheses.

5.1 Descriptive Statistics

5.1.1 Number of Respondents

There were altogether 176 responses from a total population of 270. These companies were selected from the list of contractors provided by FCAN Kathmandu. The list contains all classes of contractors from class 'A' to class 'D.' These companies are scattered in three major cities of Nepal, namely Kathmandu, Bhaktapur, and Patan. In total 270 questionnaires were sent via Google form, and these questionnaires were hand-delivered to contractors that had trouble using Google Forms as they also wished to meet the researcher in person for greater clarity. Questionnaires were also physically delivered at the FCAN office in the hope that the contractors who visited the office, more often for association meetings and other errands, would have some time to fill out the questionnaire. Out of the 270 questionnaires delivered, 126 responses were received via a Google Form, and the rest were received from the FCAN office and the private offices of the contractors, where the questionnaires were hand-delivered. Those responses that failed to meet the general criteria for further analysis were rejected. The responses with maximum missing values were rejected as well. Only responses that met the full criteria of the survey with minimum missing values were retained. The number of eligible responses after rejection was 176, which was an acceptable sample for a total population of 270 at a 95% confidence level and a 5% margin of error. The responses were first dumped in a spreadsheet and then transferred to IBM SPSS version 23. It has been recommended, before using multivariate analysis, that the empirical data should first go through preliminary analysis such as screening and cleaning data, which includes checking for outliers and missing values if any (Tabachnick, 2013). In the following sections, the preliminary analysis of the empirical data is discussed.

5.1.2 Demographic Characteristics of the Respondents

The demographic information of the respondents, in this case organizations, consists of the corporate status of the respondents in their respective companies, the classification of the company they represent, years of operation, and the number of employees. The table below shows the total number of the population, which is 176. With 3 missing values, the total number of positions in the organization was reduced to

173. The minimum and maximum values for all 4 demographies were consistent with the coding values.

Table 5.1 Descriptive Statistic for Maximum and Minimum Values

Statistics

		Position in the organization	classification	Years of operation	No. of employees
N	Valid	173	176	176	176
	Missing	3	0	0	0
Minimum		1	1	1	1
Maximum		3	4	4	5

Table 5.2 Descriptive statistics for Position in the Organization

Position in the Organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 President/owner/CEO	126	71.6	72.8	72.8
	2 Managing director	33	18.8	19.1	91.9
	3 Others	14	8.0	8.1	100.0
	Total	173	98.3	100.0	
Missing	System	3	1.7		
Total		176	100.0		

As can be seen in Table 5.2, the number of respondents that were in the owner, president, or CEO category was 126 which constituted nearly 72 percent of the total sample. The managing directors, CFO, or vice-president that responded constituted 18% of the total sample, and the respondents that fell under the “other” category constituted only 8%. Hence it can be inferred from the table above that this study has successfully managed to retrieve the information from individuals who represented higher status in their respective organizations. These respondents, as they hold the position of CEO, president, and owner, are responsible for making prime decisions, decisions that can range from buying products from a particular vendor to the sharing of sensitive information with the partner organization.

Table 5.3 Classification of Construction Companies

Classification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Class A	61	34.7	34.7	34.7
	2 Class B	28	15.9	15.9	50.6
	3 Class C	29	16.5	16.5	67.0
	4 Class D	58	33.0	33.0	100.0
	Total	176	100.0	100.0	

According to the Construction Classification Regulation in 1975, construction companies are classified under four categories: class ‘A,’ class ‘B,’ class ‘C,’ and class ‘D,’. The classification depends on their physical facilities, resources, and experience, which again was amended in 1994 and 1999. From the table above, the number of respondents from the Class ‘A’ category was 61, which constituted 35% of the total respondents. Likewise, out of the total of 176, 28 respondents were from the class ‘B’ category, and they constituted 16% of the total sample. The number of respondents from the class ‘C’ category was 29, which constituted 17%. Lastly, the number of respondents from the class ‘D’ category was 58, which was close to number of the class ‘A’ category. Class ‘D’ constituted 33% of the total responses. Hence, it is concluded that the majority of the responses were from the class ‘A’ and class ‘D’ categories of contractors.

Table 5.4 Descriptive Statistics for Years of Operation

Years of operation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Less than one year	3	1.7	1.7	1.7
	2 1 to 4 years	13	7.4	7.4	9.1
	3 5 to 10 years	26	14.8	14.8	23.9
	4 More than 10 years	134	76.1	76.1	100.0
	Total	176	100.0	100.0	

According to Table 5.4, the number of responses from the organizations that have operated for less than one year was low at 3, which constituted 1.7% of the total

responses. Likewise, the number of responses from organizations that have operated from 1 to 4 years was 13 only, which constituted 7.4% of the total respondents. The number of responses from organizations that had operated for 5 to 10 years was 26, which constituted 14.8% of the total respondents. Finally, the number of responses from organizations that had operated for more than 10 years was 134, which constituted 76.1%. It is concluded that the organization that has operated for more than 10 years constituted the majority of responses, which is a positive sign as it can also be assumed that these organizations have spent a considerable number of years dealing with their suppliers; hence their responses can be judged as valid.

Table 5.5 Descriptive Statistic for no. of Employees

No. of employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 less than 100	128	72.7	72.7	72.7
	2 100-499	38	21.6	21.6	94.3
	3 500-1999	10	5.7	5.7	99.4
	5 5000-9999	0	0	0	100.0
	Total	176	100.0	100.0	

Table 5.5 shows that the significant number of organizations that responded have fewer employees than 100. The number of responses from organizations having fewer than 100 employees was 127, which constituted 72% of the total respondents. The number of responses from organizations having 100 to 499 employees was 38, which constituted 21.6% of the total respondents, and the number of responses from organizations having 500 to 1,999 employees was 10, which constituted 5.7% of the total respondents.

5.1.3 Research Variables

5.1.3.1 Perceived Dependency

Table 5.6 provides the level of dependency that the buyers have on the supplier to rely on goods and services that they alone cannot manufacture. The frequency distributions, means, and other descriptive statistics of the perceived

dependency are presented. The results show that the mean score of the latent variable was 4.62 and the standard deviation was 1.72, suggesting a moderate level.

As shown in the table, the majority of the respondents, 22.4%, answered that they felt that they could rely upon the supplier for product delivery. Around 22.4% strongly agreed that they depended upon the supplier for product supply. Twenty-one point three percent somewhat agreed that they could rely upon the supplier for product information, and 29.4% strongly agreed that they could rely upon the supplier for price information. Twenty-three point five percent, 28.7%, 30.6%, 25.9%, and 23.8% were neutral in terms of relying upon the supplier for field staff assistance, financial assistance, loan counseling, and equipment supply respectively.

Table 5.6 The Extent to which the Buyer is Dependent on the Seller (Perceived Dependency)

	Level							$\bar{x}$	S.D
	Strongly Disagree	**Disagree**	**Somewhat disagree**	**Neutral**	**Somewhat Agree**	**Agree**	**Strongly Agree**		
- The extent to which the organization feels that they rely upon the supplier/manufacturer for product delivery	6 (3.5%)	12 (7.1)	17 (10%)	36 (21.2)	32 (18.8%)	29 (17.1%)	38 (22.4%)	4.85	1.695
- The extent to which the organization feels that they rely upon the supplier/manufacturer for product supply	5 (2.9%)	11 (6.5%)	19 (11.2%)	25 (14.7%)	34 (20%)	38 (22.4%)	38 (22.4%)	4.99	1.668
- The extent to which the organization feels that they rely upon the supplier/manufacturer for product information	6 (3.6%)	15 (8.9%)	15 (8.9%)	40 (23.7%)	36 (21.3%)	27 (16%)	30 (17.8%)	4.69	1.658
- The extent to which the organization feels that they rely upon the supplier/manufacturer for price information	5 (2.9%)	11 (6.5%)	14 (8.2%)	40 (23.5%)	36 (21.2%)	14 (8.2%)	50 (29.4%)	4.96	1.701
- The extent to which the organization feels that they rely upon the supplier/manufacturer for field staff assistance	9 (5.3%)	21 (12.3%)	11 (6.4%)	49 (28.7%)	29 (17%)	23 (13.5%)	29 (17%)	4.48	1.747
- The extent to which the organization feels that they rely upon the supplier/	10 (5.9%)	20 (11.8%)	14 (8.2%)	52 (30.6%)	28 (16.5%)	18 (10.6%)	28 (16.5%)	4.38	1.740
- manufacturer for financial assistance									
- The extent to which the organization feels that they rely upon the supplier/manufacturer for loan counseling	22 (12.9%)	24 (14.1%)	28 (16.5%)	44 (25.9%)	25 (14.7%)	5 (2.9%)	22 (12.9%)	3.76	1.812
- The extent to which the organization feels that they rely upon the supplier/manufacturer for equipment supply	6 (3.5%)	16 (9.3%)	13 (7.6%)	41 (23.8%)	26 (15.1%)	28 (16.3%)	42 (24.4%)	4.84	1.752
Total								4.62	1.72

5.1.3.2 Input-Related Agreement

Input-related agreement, one of the governing mechanisms of structural governance, is the extent to which the buyer and supplier enter an agreement before making any exchange of goods and services. Table 5.7 provides the level to which the buyer and supplier agree before entering the exchange relationship. The output indicates that the buyer enters an input-related agreement to a high extent (4.79).

As shown in the table, 27.6% strongly agreed that they agreed on delivery and after-sales services before entering an exchange relationship with the supplier. Approximately 20.6% strongly agreed that they agreed to price and commission before entering the exchange relationship with their supplier.

5.1.3.3 Risk-Related Agreement

Next in structural governance is the risk-related agreement. As shown in Table 5.8, 26.0% of the respondents strongly agreed that they made a confidentiality agreement before entering the exchange relationship with their supplier, whereas, 18.9% somewhat agreed that they agreed to the resolution of conflicts before entering the exchange relationship with their supplier. Twenty-nine percent of the respondents were neutral in terms of agreeing about the early termination of the exchange relationship. The results also indicate that the buyer and the supplier have formal agreements at a considerable level. The mean score in all aspects was high at 5.01 for confidentiality, 4.42 for resolution of conflicts, and 4.16 for the termination of the exchange relationship.

Table 5.7 The Extent to which the Parties draw a Formal Agreement (Input-Related Agreement)

	Levels							$\bar{x}$	S.D
	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat Agree	Agree	Strongly Agree		
- The extent to which agreements were made about delivery and after-sales services at the beginning of the exchange relationship	10 (5.7%)	10 (5.7%)	11 (6.3%)	33 (19%)	28 (16.1%)	34 (19.5%)	48 (27.6%)	5.03	1.788
- The extent to which agreements were made about pricing and commission at the beginning of the exchange relationship	15 (8.8%)	12 (7.1%)	13 (7.6%)	33 (19.4%)	30 (17.6%)	32 (18.8%)	35 (20.6%)	4.69	1.866
Total								4.79	1.78

Table 5.8 The Extent to which the Parties in a Contract draw Formal Agreements (Risk-Related Agreement)

	Levels							$\bar{x}$	S.D
	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat Agree	Agree	Strongly Agree		
- The extent to which agreements were made about confidentiality at the beginning of the exchange relationship	8 (4.7%)	8 (4.7%)	12 (7.1%)	39 (23.1%)	25 (14.8%)	33 (19.5%)	44 (26.0%)	5.01	1.718
- The extent to which agreements were made about procedures of resolution of conflicts at the beginning of the exchange relationship	16 (9.5%)	13 (7.7%)	16 (9.5%)	42 (24.9%)	32 (18.9%)	21 (12.4%)	29 (17.2%)	4.42	1.824
- The extent to which agreements were made about early termination at the beginning of the exchange relationship	19 (11.3%)	16 (9.5%)	20 (11.9%)	49 (29.2%)	20 (11.9%)	16 (9.5%)	28 (16.7%)	4.16	1.874
Total								4.53	1.803

5.1.3.1 Frequency of Communication

Table 5.9 shows the extent to which buyers and suppliers communicate via telephone, email, and face-to-face contact. Around 41.3% of the respondents admitted that they have telephone contact more than once per week with their supplier. Twenty-nine percent admitted that they have telephone contact every week with their supplier However, only 14.8% admitted that they have email contact, more than once per week, with their supplier. Nineteen point four percent of the respondents admitted that they have face-to-face contact with their supplier more than once per week. Another 19.4% of the respondents admitted that they have face-to-face contact only once every two weeks. Approximately 22.4% also admitted that they have face-to-face contact with their supplier only quarterly. The average mean score of 4.52 and the standard deviation of 1.89 suggested that the parties have achieved a higher level of communication.

5.1.3.2 Ease of Communication

As can be seen in Table 5.10, 22.5% of the respondents strongly agreed that they feel comfortable speaking with everyone regardless of the position at the supplier's office. Another 22.5% of the respondents also answered but only agreed that they have developed an ease in talking to everyone at the supplier's office. However, 24.3% of the respondents answered that they are neutral about feeling easy when talking to everyone at the supplier's organization. In terms of the risk of leaking confidential information, only 4.7% of the respondents perceived that there was a chance of confidential information leaks from the supplier's end. However, 18.7% of the respondents strongly felt that they could trust their supplier with confidential information. Further another 18.7% of the respondents felt that they could rely on their supplier with confidential information. The results also indicate that the partner has the highest level of developing ease (mean score = 5.03), and confidence regarding the non-disclosure of confidential matters (mean score = 4.71).

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Table 5.9 The Extent to which the Partners in a Relation Communicate with Each Other (Frequency of Communication)

	Levels							$\bar{x}$	S.D
	Once per year or less	Once every six months	Once per quarter	Monthly	Once every two weeks	Weekly	More than one per week		
- How often do you have telephone contact with the most important supplier?	3 (1.7%)	8 (4.7%)	11 (6.4%)	16 (9.3%)	27 (15.7%)	36 (20.9%)	71 (41.3%)	5.60	1.599
- How often do you have email contact with the most important supplier?	34 (20.1%)	21 (12.4%)	26 (15.4%)	28 (16.6%)	20 (11.8%)	15 (8.9%)	25 (14.8%)	3.73	2.054
How often do you have face-to-face contact with the most important supplier?	11 (6.5%)	19 (11.2%)	38 (22.4%)	27 (15.9%)	33 (19.4%)	9 (5.3%)	33 (19.4%)	4.24	1.835
Total								**4.52**	**1.89**

Table 5.10 Ease of Communication

	Levels							$\bar{x}$	S.D
	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat Agree	Agree	Strongly Agree		
- It is very easy to speak with everyone at the supplier's organization whenever we feel it necessary, regardless of rank or position	6 (3.5%)	5 (2.9%)	15 (8.7%)	42 (24.3%)	27 (15.6%)	39 (22.5%)	39 (22.5%)	5.03	1.595
- The risk of leaking confidential information is…(1=very large to 7 = very small)	8 (4.7%)	10 (5.8%)	25 (14.6%)	34 (19.9%)	30 (17.5%)	32 (18.7%)	32 (18.7%)	4.71	1.710
Total								**4.87**	**1.65**

5.1.3.1 Relational Trust

Table 5.11 shows the extent to which the buyers have developed trust with their supplier over a period of time. This relational trust is measured by six indicators. Around 33.9% of the respondents perceived that their supplier always delivered what they promised. Another 16.4% have a similar view on the same statement but only agree. 26.3% are neutral on the same argument, as they also believe that their supplier did what they promised. In terms of the statement that their suppliers will not take unnecessary advantage, 20.7% of the respondents strongly agreed, 18.3% of the respondents only agreed, 20.7% of the respondents somewhat agreed, and 22.5% were neutral. Thirty-point four percent of respondents strongly agreed that their supplier was sincere, and 22.2% of the respondents only agreed with the above statement. Likewise, 18.7% somewhat agreed that their supplier was sincere. In regards to the statement that their supplier's future decisions or actions will not adversely affect them, 21.2% of respondents strongly agreed, 18.2% only agreed, 25.5% of respondents were neutral on that statement, and 21.8% of the respondent were confident that their supplier was concerned about their welfare or interests. Another 18.2% of the respondents were confident but only agreed with that statement. However, 27.6% of the respondents were neutral that their supplier was concerned about the buyers' welfare or interest.

Table 5.11 Relational Trust

	Levels							$\bar{x}$	S.D
	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat Agree	Agree	Strongly Agree		
- The most important supplier always did what he promised.	4 (2.3%)	5 (2.9%)	10 (5.8%)	45 (26.3%)	21 (12.3%)	28 (16.4%)	58 (33.9%)	5.28	1.610
- Our organization believes that the most important supplier will not make excessive requests of us.	8 (4.7%)	6 (3.6%)	16 (9.5%)	38 (22.5%)	35 (20.7%)	31 (18.3%)	35 (20.7%)	4.89	1.642
- Our organization believes that the most important supplier is sincere.	4 (2.3%)	6 (3.5%)	9 (5.3%)	30 (17.5%)	32 (18.7%)	38 (22.2%)	52 (30.4%)	5.35	1.551
- Our organization believes that the most important supplier's future decisions and actions will not adversely affect us.	9 (5.3%)	12 (7.1%)	13 (7.6%)	44 (25.9%)	25 (14.7%)	31 (18.2%)	36 (21.2%)	4.77	1.744
- When making important decisions, the most important supplier cares about our welfare or interests.	5 (2.9%)	8 (4.7%)	13 (7.6%)	47 (27.6%)	30 (17.6%)	30 (17.6%)	37 (21.8%)	4.92	1.591
- When it comes to things that are important to us, we can depend on our most important supplier's support.	6 (3.5%)	13 (7.6%)	9 (5.3%)	38 (22.4%)	33 (19.4%)	33 (19.4%)	38 (22.4%)	4.94	1.670
Total								**5.025**	**1.63**

5.1.3.1 Exchange of Information

Table 5.12 presents the extent to which the exchange of information occurs between respondents and their suppliers. Twenty-two point four percent of the respondents strongly agreed that they exchanged detailed information with their supplier concerning current and new construction projects. Another 19.5% were confident but only agreed with the above statement, while 17.2% of the respondents somewhat agreed that they exchanged detailed information about current and future projects with their supplier. Regarding the statement that they exchanged detailed information about their inventory level with their supplier, 19.1% strongly agreed, 20.0% agreed, 20.2% somewhat agreed, and 22.0% were neutral. Around 23.3% of the respondents strongly agreed that they frequently exchanged or shared their demand forecasts with their suppliers. Another 16.9% also agreed that they shared detailed information about demand forecasts with their supplier. Another 20.3% somewhat agreed with the above statement. About the statement that they exchanged detailed information about the attributes and performance parameters related to their project, 20.5% strongly agreed, 15.2% only agreed; 17.5% somewhat agreed; and 24.6% were neutral. Concerning the statement that they exchanged detailed information about the cost breakdown structure of the project in hand, 18.8% strongly agreed,13.5% only agreed, 18.2% somewhat agreed, and 18.8% were neutral. Likewise, 30.4% of the respondents strongly agreed that they shared detailed information about delivery schedules and other supply services at their construction site. Another 13.5% of the respondents agreed on the same statement, 17.5% somewhat agreed with that same statement, and 18.1% were neutral about the same argument. Regarding sharing detailed information concerning project capacity and level of saturation, 18.8% of the respondents strongly agreed, 14.7% of the respondents only agreed with that statement, 20.6% somewhat agreed, and 25.9% were neutral. Likewise, 20% of the respondents strongly agreed that they shared detailed information about changes in the volume mix and sequencing in their project. Another 13.5% agreed to the above statement, another 22.9% somewhat agreed and the same percentage were also neutral about the statement. However, 18% of the respondent were reluctant to share financial information with their supplier. Only 15.7% of the respondents strongly agreed that they shared financial performance ratios with their suppliers.

Table 5.12 Exchange of Information

	Level							$\bar{x}$	S.D
	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat Agree	Agree	Strongly Agree		
- You frequently exchange with your most important supplier detailed information concerning current and new construction projects	10 (5.7%)	10 (5.7%)	17 (9.8%)	34 (19.5%)	30 (17.2%)	34 (19.5%)	39 (22.4%)	4.85	1.764
- You frequently exchange with your most important supplier, detailed information concerning inventory level	9 (5.2%)	11 (6.4%)	12 (6.9%)	38 (22.0%)	35 (20.2%)	35 (20.0%)	33 (19.1%)	4.83	1.689
- You frequently exchange with your most important supplier detailed information concerning project plans/demand forecast	5 (2.9%)	10 (5.8%)	16 (9.3%)	37 (21.5%)	35 (20.3%)	29 (16.9%)	40 (23.3%)	4.94	1.639
- You frequently exchange with your most important supplier detailed information about the attributes and performance parameters related to your projects.	8 (4.7%)	12 (7.0%)	18 (10.5%)	42 (24.6%)	30 (17.5%)	26 (15.2%)	35 (20.5%)	4.71	1.717
- You frequently exchange with your most important supplier detailed information about the cost breakdown structure of the projects in hand.	14 (8.2%)	16 (9.4%)	22 (12.9%)	32 (18.8%)	31 (18.2%)	23 (13.5%)	32 (18.8%)	4.45	1.865
- You frequently exchange with your most important supplier detailed information about delivery schedules and other supply services at construction/projects sites.	4 (2.3%)	10 (5.8%)	14 (8.2%)	31 (18.1%)	30 (17.5%)	30 (17.5%)	52 (30.4%)	5.17	1.670
- You frequently exchange with your most important supplier detailed information about project capacity and its level of saturation.	11 (6.5%)	6 (3.5%)	17 (10.0%)	44 (25.9%)	35 (20.6%)	25 (14.7%)	32 (18.8%)	4.70	1.685
- You frequently exchange with your most important supplier detailed information about changes in volume, mix, and sequencing at your construction/project site.	8 (4.7%)	11 (6.5%)	16 (9.4%)	39 (22.9%)	39 (22.9%)	23 (13.5%)	34 (20.0%)	4.74	1.680
- You frequently exchange with your most important supplier detailed information about key financials such as turnover, cash flows, and profitability ratios.	31 (18.0%)	25 (14.5%)	23 (13.4%)	29 (16.9%)	20 (11.6%)	17 (9.9%)	27 (15.7%)	3.82	2.062
Total								**4.69**	**1.72**

5.1.3.1 Buyer's Satisfaction

Table 5.13 shows the extent to which the respondents felt that they were satisfied in terms of services and other matters with their supplier. Twenty-four point percent of the respondents strongly agreed that they were satisfied with the quality and durability of the products supplied by their supplier. Another 21.4% of the respondents also agreed that the products and other materials supplied by their supplier were quality-checked and durable. Nineteen-point-seven percent of the respondents also felt the same but somewhat agreed with the above statement. 24..3% of respondents also felt the same but stated that they were neutral. When asked if their supplier uses advanced technology to manufacture the product as compared to other suppliers in the market, 17.4% strongly agreed with the statement, 19.8% of the respondents agreed, 22.1% somewhat agreed, and 25% were neutral. Regarding whether they were satisfied in terms of the quality of the supply of the services of their most important supplier, 21.6% of the respondents strongly agreed, 22.8% agreed, 22.8% somewhat agreed, and 22.8% were neutral. Likewise, 17.0% of the respondents believed that the price offered by their most important supplier was comparatively lower than the price offered by the market. Another 15.8% also believed this but only agreed to that statement, 19.3% somewhat perceived that they were being offered a lower price than by the market, and 28.7% were neutral about the price offered by their supplier. Regarding the statement that the supplier was very flexible in the modification and customization of the products; 21.1% strongly agreed, 18.7% of the respondents agreed, 14% somewhat agreed, and 28.7% were neutral. Likewise, when asked if they were satisfied with their supplier's flexibility regarding batch size, 17.5% strongly agreed, another 17.5% agreed, 19.9% answered that they somewhat agreed, and 29.9% were neutral regarding the above statement. Twenty-one point two percent of the respondents strongly agreed that they were satisfied with their most important supplier's order delivery lead time, 20.6% agreed to the above statement, 20.0% of the respondents somewhat agreed that they were satisfied with their supplier's order to delivery lead time and around 23.5% stated that they were neutral.

Table 5.13 Exchange of Information

	Level							$\bar{x}$	S.D
	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat Agree	Agree	Strongly Agree		
- You frequently exchange with your most important supplier detailed information concerning current and new construction projects	10 (5.7%)	10 (5.7%)	17 (9.8%)	34 (19.5%)	30 (17.2%)	34 (19.5%)	39 (22.4%)	4.85	1.764
- You frequently exchange with your most important supplier, detailed information concerning inventory level	9 (5.2%)	11 (6.4%)	12 (6.9%)	38 (22.0%)	35 (20.2%)	35 (20.0%)	33 (19.1%)	4.83	1.689
- You frequently exchange with your most important supplier detailed information concerning project plans/demand forecast	5 (2.9%)	10 (5.8%)	16 (9.3%)	37 (21.5%)	35 (20.3%)	29 (16.9%)	40 (23.3%)	4.94	1.639
- You frequently exchange with your most important supplier detailed information about the attributes and performance parameters related to your projects.	8 (4.7%)	12 (7.0%)	18 (10.5%)	42 (24.6%)	30 (17.5%)	26 (15.2%)	35 (20.5%)	4.71	1.717
- You frequently exchange with your most important supplier detailed information about the cost breakdown structure of the projects in hand.	14 (8.2%)	16 (9.4%)	22 (12.9%)	32 (18.8%)	31 (18.2%)	23 (13.5%)	32 (18.8%)	4.45	1.865
- You frequently exchange with your most important supplier detailed information about delivery schedules and other supply services at construction/projects sites.	4 (2.3%)	10 (5.8%)	14 (8.2%)	31 (18.1%)	30 (17.5%)	30 (17.5%)	52 (30.4%)	5.17	1.670
- You frequently exchange with your most important supplier detailed information about project capacity and its level of saturation.	11 (6.5%)	6 (3.5%)	17 (10.0%)	44 (25.9%)	35 (20.6%)	25 (14.7%)	32 (18.8%)	4.70	1.685
- You frequently exchange with your most important supplier detailed information about changes in volume, mix, and sequencing at your construction/project site.	8 (4.7%)	11 (6.5%)	16 (9.4%)	39 (22.9%)	39 (22.9%)	23 (13.5%)	34 (20.0%)	4.74	1.680
- You frequently exchange with your most important supplier detailed information about key financials such as turnover, cash flows, and profitability ratios.	31 (18.0%)	25 (14.5%)	23 (13.4%)	29 (16.9%)	20 (11.6%)	17 (9.9%)	27 (15.7%)	3.82	2.062
Total								**4.69**	**1.72**

5.1.3.1 Buyer's Satisfaction

Table 5.13 shows the extent to which the respondents felt that they were satisfied in terms of services and other matters with their supplier. Twenty-four point percent of the respondents strongly agreed that they were satisfied with the quality and durability of the products supplied by their supplier. Another 21.4% of the respondents also agreed that the products and other materials supplied by their supplier were quality-checked and durable. Nineteen-point-seven percent of the respondents also felt the same but somewhat agreed with the above statement. 24..3% of respondents also felt the same but stated that they were neutral. When asked if their supplier uses advanced technology to manufacture the product as compared to other suppliers in the market, 17.4% strongly agreed with the statement, 19.8% of the respondents agreed, 22.1% somewhat agreed, and 25% were neutral. Regarding whether they were satisfied in terms of the quality of the supply of the services of their most important supplier, 21.6% of the respondents strongly agreed, 22.8% agreed, 22.8% somewhat agreed, and 22.8% were neutral. Likewise, 17.0% of the respondents believed that the price offered by their most important supplier was comparatively lower than the price offered by the market. Another 15.8% also believed this but only agreed to that statement, 19.3% somewhat perceived that they were being offered a lower price than by the market, and 28.7% were neutral about the price offered by their supplier. Regarding the statement that the supplier was very flexible in the modification and customization of the products; 21.1% strongly agreed, 18.7% of the respondents agreed, 14% somewhat agreed, and 28.7% were neutral. Likewise, when asked if they were satisfied with their supplier's flexibility regarding batch size, 17.5% strongly agreed, another 17.5% agreed, 19.9% answered that they somewhat agreed, and 29.9% were neutral regarding the above statement. Twenty-one point two percent of the respondents strongly agreed that they were satisfied with their most important supplier's order delivery lead time, 20.6% agreed to the above statement, 20.0% of the respondents somewhat agreed that they were satisfied with their supplier's order to delivery lead time and around 23.5% stated that they were neutral.

Table 5.14 Buyer's Satisfaction

	Level							$\bar{x}$	S.D
	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat Agree	Agree	Strongly Agree		
- The products and other materials supplied/produced by your most important supplier with regards to quality and durability are better than other suppliers in the market.	6 (3.5%)	6 (3.5%)	6 (3.5%)	42 (24.3%)	34 (19.7%)	37 (21.4%)	42 (24.3%)	5.14	1.558
- To manufacture the materials/products, your most important supplier uses process technology that is more advanced than other suppliers in the market.	5 (2.9%)	9 (5.2%)	13 (7.6%)	43 (25.0%)	38 (22.1%)	34 (19.8%)	30 (17.4%)	4.87	1.543
- You are very satisfied with the quality of the supply services of your most important supplier (on-time delivery, etc.)	3 (1.8%)	7 (4.1%)	7 (4.1%)	39 (22.8%)	39 (22.8%)	39 (22.8%)	37 (21.6%)	5.16	1.457
- You are very satisfied with the price of the products/materials purchased from your most important supplier because it is lower than the price offered by other suppliers in the market.	8 (4.7%)	8 (4.7%)	17 (9.9%)	49 (28.7%)	33 (19.3%)	27 (15.8%)	29 (17.0%)	4.68	1.614
- The most important supplier is very flexible concerning the customization or modification of the product/materials.	4 (2.3%)	9 (5.3%)	17 (9.9%)	49 (28.7%)	24 (14%)	32 (18.7%)	36 (21.1%)	4.87	1.600
- The most important supplier is very flexible concerning the batch size.	8 (4.7%)	9 (5.3%)	9 (5.3%)	51 (29.8%)	34 (19.9%)	30 (17.5%)	30 (17.5%)	4.78	1.604
- You are very satisfied with your most important supplier's order delivery lead time.	4 (2.4%)	5 (2.9%)	16 (9.4%)	40 (23.5%)	34 (20.0%)	35 (20.6%)	36 (21.2%)	5.02	1.523
Total								4.93	1.55

5.1.3.1 Collaboration

Table 5.14 presents the extent to which the respondents believed that there existed a collaboration between them and the supplier. Regarding the statement that they were loyal to their supplier, 35.3% of the respondents strongly agreed with the above statement, 22.0% only agreed; 16.8% of the respondents somewhat agreed, and 16.2% were neutral. Likewise, 24.9% of the respondents strongly agreed that they had frequent face-to-face planning with their supplier, 19.9% agreed with the above statement, and 22.5% somewhat agreed that they had frequent face-to-face planning with their supplier; around 24.3% were neutral to regarding the above statement. When asked if there was a high level of communication on important issues with their supplier, 30.1% of the respondents strongly agreed, 21.4% of the respondents only agreed, around 19.9% of the respondents somewhat agreed; and 19.7% of the respondents were neutral.

Table 5.15 Collaboration

	Level							$\bar{x}$	S.D
	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat Agree	Agree	Strongly Agree		
- Your organization is loyal to the supplier.	5 (2.9%)	5 (2.9%)	7 (4.0%)	28 (16.2%)	29 (16.8%)	38 (22.0%)	61 (35.3%)	5.48	1.569
- Your organization has frequent face-to-face planning/communication with your supplier.	3 (1.7%)	8 (4.6%)	4 (2.3%)	42 (24.3%)	39 (22.5%)	33 (19.1%)	43 (24.9%)	5.16	1.532
- There is a high-level of corporate level communication on important issues with the supplier.	3 (1.7%)	4 (2.3%)	12 (6.9%)	34 (19.7%)	31 (19.9%)	37 (21.4%)	52 (30.1%)	5.34	1.507
Total								**5.32**	**1.54**

5.2 Data preparation

For preparing the multivariate data for multivariate analysis it is imperative that the researcher ensure that all of the assumptions are met. Multivariate data analysis demands several assumptions that cannot be overlooked, and these assumptions are the preliminary testing of outliers, and the assessment of the normality of data and missing data to ensure that the collected data are suitable for multiple regression. Hence, the following sections deal with data preparation to determine whether the collected data were suitable for further analysis.

5.2.1 Normality Test

One of the prime assumptions of multivariate techniques is that data should be normally distributed. The screening of continuous variables for normality is an important preliminary step in almost every multivariate analysis, especially when the goal of the researcher is inference (Tabachnick & Fidell, 2007). However, it is common in social sciences to find that the variables are not normally distributed (Pallant, 2020). The robustness of inferential statistics to withstand the violation of normality has been asserted by many statisticians; however, Pallant (2020) reports that the robustness of inferential statistics further declines as distributions depart from normality rapidly. For this study, there was a mild depart of distributions of variables from normality. Hence, to reduce such a departure from normality the outliers were corrected by changing the value of the variable (s) so that the case could no longer have a significant impact on normality (Tabachnick & Fidell, 2001). The normality of variables can either be assessed by statistical methods or by graphical methods. With graphical methods, the normality of variables was assessed by using techniques from SPSS such as the histogram, box plot, and Q-Q plot. Two components of the statistical methods that were used in assessing normality were skewness and kurtosis. Skewness shows to what extent the scores are symmetrically distributed or indicates the symmetry of the distribution. On the other hand, kurtosis indicates to what extent the distribution of scores is peaked, or in simple words it shows the peakedness of the distribution. The table below, exhibiting a statistical method, assesses the normality of the distribution of all the variables.

Table 5.16 Normality of All Variables

Variables	Skewness	Kurtosis	Mean	5%Mean	Kolmogorov-Smirnov (Sig.)
Perceived dependency	-.188	-.343	37.02	37.04	0.076
Structural governance	-.284	-.209	23.27	23.43	0.07
Relational governance	-.321	.273	53.47	53.68	.010
Exchange of information	-.229	-.162	42.39	42.63	0.073
Exchange performance	-.306	.169	50.658	50.85	0.055

Table 5.15 assesses the normality of variables through five statistical methods. These five methods are Skewness, Kurtosis, Mean, 5% Trimmed Mean, and Kolmogorov-Smirnov. As mentioned above, Skewness indicates the symmetry of the distribution of variables. On the other hand, Kurtosis exhibits the 'peakedness' of the distribution of variables. A positive skewness value suggests that the variables' scores are grouped to the left-hand side at low values. Negative values of skewness point that the distribution of the scores of variables is grouped to the right end at high values. Likewise, a positive kurtosis value shows that the distribution of the variable's score is rather peaked, grouped in the center, with long thin tails. The value of a kurtosis below 0 indicates that the distribution of the variable's score is relatively flat, i.e., there are too many cases in the extreme. All of the variables, listed in the table above have negative scores for both statistics, which indicates that the scores are clustered at the high end of the right-hand side for skewness, and the distribution of the scores in the variables is relatively flat for kurtosis. The normality of the data is expected if both statistics' values range between +2 and -2 (George & Mallery, 2010; Trochim & Donnelly, 2001). This suggests that the distribution of the scores of the variables has violated normality. Another statistic shown in the table is the 5% Trimmed Mean. To obtain this, the software removes the top 5% of cases and calculates a new mean. This value is used in comparing with the original mean to see whether the extreme scores have any significant impact on the mean. These two mean values should not be so different. The 5% trimmed Mean value of all the variables is very close to the original mean; hence it is concluded that the extreme scores have no impact on the mean.

Finally, the fifth statistic to test the normality is Kolmogorov-Smirnov. A non-significant result, i.e. a significant value over 0.05, ensures normality (Pallant, 2020). In this case only the variable 'collaboration' has a value over 0.05, indicating a violation of normality distribution. The normality test from the five statistical methods produced a mixed result. Although some of the variables have failed the normality test, the others are within the specified parameter. This study continued to advance with statistical analysis despite the mixed results, considering the robustness of the inferential statistics to withstand the violation of normality.

5.2.2 Reliability Test of All Measurements

It needs to be ensured that the scales that have been selected to measure the latent variables are reliable and measure the same underlying construct. This also refers to the extent to which the items that make up the scale 'hang together' (Pallant, 2020). Although this study has selected scales that have been already used in past studies, as it is being applied to a different context, the reliability of measures is deemed important. Hence, this study relies on Cronbach's alpha coefficient, one of the most commonly used indicators, to check the reliability of the observed items. According to DeVellis and Thorpe (2021), the Cronbach alpha coefficient of a scale should be above 0.7. This means that the closer is the Cronbach alpha coefficient value to 1.0, the more reliable is the scale. However, the Cronbach alpha coefficient value above 0.6 is also acceptable in social science (Nunnally, 1978). The underlying value for this study is above 0.7. The Cronbach Alpha values can also be quite sensitive to the number of items. This means that it is quite likely to have a low Cronbach alpha value of 0.5 if the scale's items are less than ten (Pallant, 2020). This study has some variables having measuring scales items fewer than five, hence it is likely that the Cronbach alpha value of some of the scales can be below 0.7 or as low as 0.5. In such cases, it is also suitable to report the mean inter-item correlation for the items (Pallant, 2020). The recommended optimal range for the inter-item correlation is from 0.2 to 0.4 (Briggs & Cheek, 1986; Pallant, 2020). The table below shows the reliability test for all the variables used in this study.

Table 5.17 Reliability Test of All Variables

Variables	No. of items	Cronbach's Alpha	Mean Inter-item
Perceived dependency	8	.850	.417
Structural governance	5	.794	.437
Relational governance	11	.800	.276
Exchange of information	9	.888	.447
Exchange Performance	10	.851	.365

As Cronbach alpha values can be quite sensitive to the number of items, and for scales having items as few as three, the alpha value can be as low as 0.5. Hence, variables such as structural governance have to measure items of as few as five. The Cronbach alpha value of the variables is .794, which is slightly above the recommended value of .7. However, as recommended by Pallant (2020), the ideal value of the Cronbach alpha coefficient should be above .7, wherein the present case, the value has reached the recommended benchmark indicating the reliability of the measuring scale.

5.2.3 Multicollinearity and Linearity

In statistics, when there is an occurrence of high intercorrelations among two or more predictor variables in a multiple regression, then there exists multicollinearity. Three statistical techniques are available or are commonly used to test the multicollinearity in the data set (Hair Jr Joseph et al., 2009; Meyers, Gamst, & G, 2013; Pallant, 2020; Tabachnick & Fidell, 2007). First, the inflation factor value is widely known as VIF. To ensure that there exists no multicollinearity among the predictor variables, the value of VIF should not be greater than 10 (Hair Jr Joseph et al., 2009). Second is the correlation matrix, and the third is the tolerance value. For this study, the researcher has relied on two statistics, i.e., VIF and tolerance.

Table 5.18 Multicollinearity Test of All Variables

Model		t	Sig.	Collinearity Statistics	
				Tolerance	VIF
1	(Constant)	5.646	.000		
	Total Perceived Dependency	1.226	.222	.691	1.447
	Total structural governance	6.849	.000	.678	1.475
	Total Relational governance	1.038	.301	.547	1.827
	Total Exchange of Information	4.415	.000	.656	1.524

The output from the statistical analysis is shown in Table 5.17. The first statistical output to check is the tolerance value. To ensure that there is no multicollinearity among variables, the tolerance value of the variables should be above 0.1. All of the variables in the output table have values above 0.1, which indicates that there exists no multicollinearity among them. The second statistic to look at is VIF. The VIF is the most commonly used statistic to check for multicollinearity, and the value of VIF for all variables, in the data set should be below 10 to ensure that there exists no multicollinearity (Meyers, Gamst, & G, 2013; Tabachnick & Fidell, 2007). The VIF values shown in Table 5.8 for all of the variables listed are less than 10. Hence, it is concluded that none of the predictor variables in the model is not correlated.

5.3 Validity Test

The validity test refers to how accurately the items in the questionnaire measure what they are intended to measure. In social science, the high validity of measures indicates that the produced results are concurrent to the real social world. In other words, it is a test to confirm whether each item is measuring the right theoretical construct named in the questionnaire (Sekaran & Bougie, 2003). One of the main statistical techniques to test the validity of items is factor analysis (FA). It is a data reduction technique, as this method takes a large set of variables and seeks for a concise way to reduce or summarize them to a smaller set of factors or components. There are two main approaches to factory analysis: exploratory and confirmatory factor analysis. Exploratory factor analysis is often used in the initial stage of research to accumulate

information about (explore) the interrelationships among a set of variables (Pallant, 2020). Confirmatory factor analysis, on the other hand, is a sophisticated technique applied in the advanced stages of the research process to test a theory about latent processes (Tabachnick & Fidell, 2007). In this technique, the variables are meticulously and specifically chosen to unfold underlying processes. Confirmatory factor analysis is more often chosen prior to performing structural equation modeling (Tabachnick & Fidell, 2007).

Four assumptions need to be met for factor analysis. First is the sample size. According to Pallant (2020), the considerable sample size should be 150 + and there should be at least five cases for each of the variables. This study has a sample size of 160+ and there is a ratio of six cases for each of the variables. Hence the first assumption is met. The second assumption that needs to be fulfilled is normality. Some of the variables in this study have violated normality. However, according to Tabachnick and Fidell (2007), "as long as PCA and FA are used descriptively as convenient ways to summarize the relationships in a large set of observed variables, assumptions regarding the distributions of variables are not in force." As factor analysis is based on correlation, it is assumed that the relationship between the variables is linear (Pallant, 2020). The analysis becomes inferior when there exists no linearity, as correlation measures the linear relationship among the variables (Tabachnick & Fidell, 2007). To test the linearity among the variables, a parametric statistic called Pearson correlation was used, as indicated earlier. A separate bivariate analysis between the variables was performed and there was a significant correlation between the variables. Hence the third assumption was also met. The fourth assumption is the absence of outliers. Outliers can have a significant effect on the factor analysis (Tabachnick & Fidell, 2007). This study had cases with several outliers, and as recommended by Tabachnick and Fidell (2007), the extreme outliers were reduced by changing the scores of the variables for the outlying cases in such a way that although they seemed deviant, they were not deviant as they were initially.

5.3.1 Confirmatory Factor Analysis

The scales used in this study were already tested in previous studies. Indeed, the measuring scales used in this study were derived from past studies with some minor

changes to fit the purpose. Hence EFA was skipped. However, CFA was conducted, as this statistical analysis is preferred often before conducting SEM (Tabachnick & Fidell, 2007). It is regarded as one of the sophisticated techniques used in the later stages of the study process to confirm a theory about latent processes (Tabachnick & Fidell, 2007). One of the differences between PCA and CFA is that PCA is associated with model development and CFA is associated with model testing. PCA is more often used in identifying the underlying processes that can produce correlations among variables, whereas CFA is used for testing whether the correlations among the variables are consistent with a hypothesized factor structure.

In the words of Byrne (2013), the "CFA of a measuring instrument is most appropriately applied to measures that have been fully developed and their factor structures validated." The validity of the CFA application, in general, is tethered to its conceptual rationale as a model-testing approach to data analysis. Moreover, based on conceptual theory, empirical research, or both combined, the researcher assumed a model and then proposed the model for a validity test given the sample data. To test the validity of the factorial structure for an assessment measure, the researcher sought to examine the extent to which the items developed measured a particular latent variable. In other words, the subscales of measuring indicators were considered to represent the latent variables; all of the items comprising a particular subscale were expected to load onto their respective latent variables.

CFA was conducted using the statistical software AMOS, which is included as an add-on feature in SPSS. Figure 5.1 exhibits the first-order CFA model. The beauty of using SEM is that it has features that can visibly represent latent variables based on their relation to the observed indicator variables. The first construct, perceived dependency, represents the extent to which the buyer is dependent on the supplier for goods, services, price information, and so forth. The second unobserved variable is structural governance, which is measured by two aspects: the input-related agreement and risk-related agreement. The input-related agreement is measured with two manifesting variables, indicating the extent to which the buyer and the seller enter an initial agreement before entering exchange relationships. The risk-related agreement is measured with three manifesting variables the respondents' opinions about the confidentiality of the exchange relationship, agreements made on pricing and

commissions, and agreement on early termination of exchange should there occur conflict between the parties. The third latent variable is relational governance measured by three dimensions, frequency of communication, trust, and ease of communication. Frequency of communication is measured by the respondents' opinion regarding telephone contact, email contact, and face-to-face contact. Trust is measured by six manifesting variables. These variables are the respondents' opinion regarding promises made by suppliers, the sincerity of suppliers, excessive requests made by the suppliers, the future decisions of suppliers, the important decisions of suppliers, and the supplier's support. Ease of communication represents the respondents' opinion regarding the ease of communicating with their respective suppliers regardless of position and leaking of confidential information. The fourth latent variable is the exchange of information. This latent variable is measured by nine manifesting variables the respondents' opinion related to the exchange of information concerning construction projects, the exchange of information details regarding the inventory, the exchange of information concerning project plans, the exchange of information on the performance of the parameters related to the current projects, the exchange of information related to the cost breakdown of all the projects, the exchange of information related to delivery schedules and other supply services, the exchange of information related to project capacity and saturation, the exchange of information related to changes in volume mix related to construction projects, and the exchange of information related to key financial indicators. The fifth construct is exchange performance; this variable subsumes two aspects, the buyer's satisfaction and collaboration. The buyer's satisfaction is measured by items such as the respondents' opinion related to the quality of the products supplied by their supplier, the technology used by their supplier to manufacture products, the quality of the supply services provided by their supplier, the price of the products, the flexibility of the supplier related to customization and modification of products, the flexibility of the supplier concerning batch size, and opinions related to order delivery lead time. Collaboration is the representation of three manifesting variables. These variables are the respondents' opinions related to the loyalty of the supplier, face-to-face planning and communication with the supplier, and high/corporate-level communication with the supplier.

5.3.2 Path Analysis

In the AMOS path diagram, the manifesting/measuring variables are enclosed in rectangles and the construct is enclosed in circles or ovals. A manifesting variable is a variable that can be observed directly and is measurable. A manifesting variable is also labeled as an observed variable, indicator, or measurable variable. A latent variable or an unobserved variable, on the other hand, is a variable that cannot be observed directly and must be explained from indicators or manifesting variables. The presence of a latent variable can only be identified by its effects on variables that are observable. The latent is also labeled as factors (i.e., factor analysis), constructs, or unobserved variables. The SEM is a combination of multiple regression and factor analysis. Figure 5.1 depicts the path analysis of all the measured variables.

To operationalize the constructs, indicators were used in both path analysis, and for the SEM. Each latent variable was operationalized using indicators that were comprised of subsets of items, in which each indicator was constructed as the sum (or average) of two or more observable items. The symbols used in the analytical path model, as well as for both latent and manifesting variables, are described in Table 5.18—5.20.

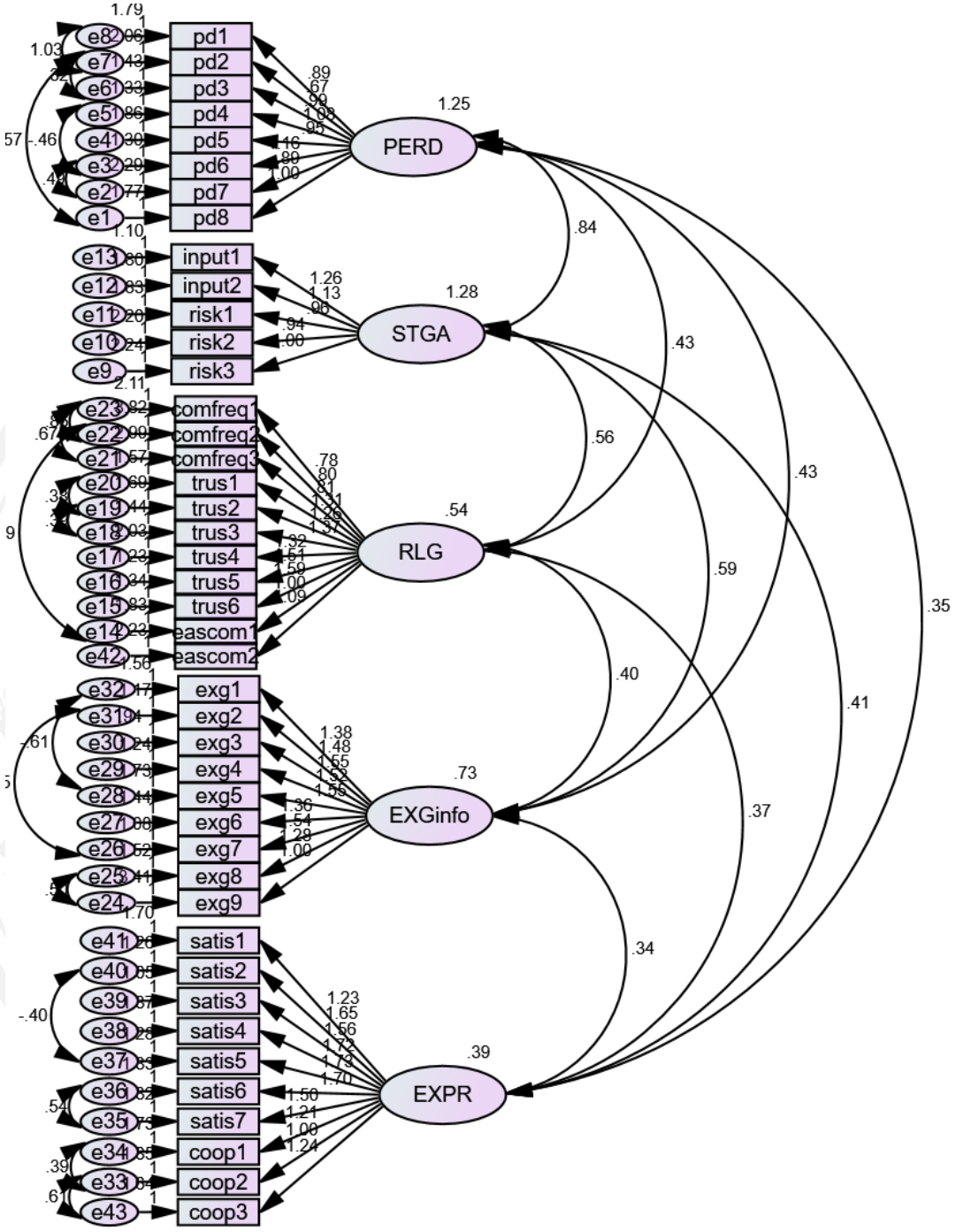


Figure 5.1 First-Order Confirmatory Factor Analysis Model

Table 5.19 Symbols of Independent Variables (Antecedent and Mediating Variables)

Symbols of Independent Variables (Antecedent and mediating variables)			
Perceived dependency			
PERD	**refers to**	**Perceived dependency**	**Latent variable**
pd1	refers to	Reliance on product delivery	Observed variable
pd2	refers to	Reliance on product supply	Observed variable
pd3	refers to	Reliance on product information	Observed variable
pd4	refers to	Reliance on price information	Observed variable
pd5	refers to	Reliance on field staff assistance	Observed variable
pd6	refers to	Reliance on financial assistance	Observed variable
pd7	refers to	Reliance on loan counseling	Observed variable
pd8	refers to	Reliance on equipment supply	Observed variable
Structural Governance			
Input-Related Agreement			
INPAG	**refers**	**Input-related agreement**	**Latent variable**
input1	refers to	Agreement for delivery services	Observed variable
input2	refers to	Agreement for pricing and commission	Observed variable
Risk-related agreement			
RISKAG	**refers to**	**Risk-related agreement**	**Latent variable**
risk1	refers to	Agreement for confidentiality	Observed variable
risk2	refers to	Agreement for conflict resolution	Observed variable
risk3	refers to	Agreement for exchange termination	Observed variable

Symbols of Independent Variables (Antecedent and mediating variables)			
Relational Governance			
Frequency of communication			
COMFREQ	**refers to**	**Frequency of communication**	**Latent variable**
comfreq1	refers to	Frequency of telephone contact	Observed variable
comfreq2	refers to	Frequency of email contact	Observed variable
comfreq3	refers to	Frequency of face-to-face contact	Observed variable
Relational trust			
TRUST	**refers to**	**Relational trust**	**Latent variable**
trus1	refers to	Trust in the supplier's promises	Observed variable
trus2	refers to	Trust in the supplier not making excessive request	Observed variable
trus3	refers to	Trust in the supplier's sincerity	Observed variable
trus4	refers to	Trust in the supplier's important decision	Observed variable
trus5	refers to	Trust in the supplier's important decision	Observed variable
trus5	refers to	Trust in the supplier's support	Observed variable
Ease of communication			
EASCOM	**refers to**	**Ease of communication**	**Latent variable**
eascom1	refers to	Ease of speaking in the supplier's office	Observed variable
eascom2	refers to	Risk of leaking confidential info.	Observed variable
Exchange of information			
EXGInfo	**refers to**	**Exchange of Information**	**Latent variable**
exg1	refers to	Exchange of info. related to current and new project	Observed variable

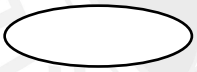
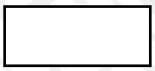
Symbols of Independent Variables (Antecedent and mediating variables)			
exg2	refers to	Exchange of info. related to inventory level	Observed variable
exg3	refers to	Exchange of info. related to demand forecasts	Observed variable
exg4	refers to	Exchange of info. related to performance of the project	Observed variable
exg5	refers to	Exchange of info related to cost breakdown of the project	Observed variable
exg6	refers to	Exchange of info. related to delivery schedules of the project	Observed variable
exg7	refers to	Exchange of info. related to the capacity of the project	Observed variable
exg8	refers to	Exchange of info related to changes in the project	Observed variable
exg9	refers to	Exchange of info related to key financials about the project	Observed variable

Table 5.20 Symbols of Dependent Variables (Exchange Performance)

Buyer's Satisfaction			
SATIS	**Refers to**	**Buyer's Satisfaction**	**Latent variable**
satis1	refers to	Quality and durability provided by the supplier	Observed variable
satis2	refers to	Advanced technology used by the supplier	Observed variable
satis3	refers to	Price offered by the supplier	Observed variable
satis4	refers to	Supplier's flexibility on	Observed variable

Buyer's Satisfaction			
SATIS	**Refers to**	**Buyer's Satisfaction**	**Latent variable**
satis5	refers to	customization product supplier's flexibility regarding batch size	Observed variable
satis6	refers to	supplier's order to delivery lead time	Observed variable
Collaboration			
COOP	**Refers to**	**Collaboration**	**Latent variable**
coop1	refers to	Loyalty of the supplier	Observed variable
coop2	refers to	Face-to-face planning with the supplier	Observed variable
coop3	refers to	High/corporate level communication with the supplier	Observed variable

Table 5.21 Statistical Symbols and Definition of Symbols in Path Diagram

Statistical Symbols and Definition of Symbols in Path Diagram		
	refers to	Latent variables
	refers to	Observed variables
	refers to	Causal relations where variables are on the receiving end of single-headed straight arrows indicating a regression path and implying a causal relationship
n	refers to	Sample size
%	refers to	Percentage
$\bar{x}$	refers to	Arithmetic mean
S.D	refers to	Standard deviation
r	refers to	Pearson Product Moment Correlation

Statistical Symbols and Definition of Symbols in Path Diagram		
x^2	refers to	Chi-square test
df	refers to	Degree of freedom
CMIN/DF	refers to	Chi-square statistic comparing the tested model and the independent model with the saturated model
NFI	refers to	Normed fit index
IFI	refers to	Incremental index of fit
RFI	refers to	Relative fit index
CFI	refers to	Comparative fit index
PRATIO	refers to	Parsimony ratio
PCFI	refers to	Parsimony comparative fit index
RMSEA	refers to	Root mean square error of approximation
S.E	refers to	Standard error
R^2	refers to	Square Multiple Correlation
TE	refers to	Total effects
DE	refers to	Direct effects
IE	refers to	Indirect effects
t	refers to	T-distribution
F	refers to	F-distribution
P-value	refers to	Probability value

5.3.3 Evaluation of First-Order CFA Model

The results of the first-order CFA model are presented in Table 5.10. The data analysis has been elaborated chronologically as follows:

5.3.3.1 Assessment of the first-order CFA model fit

The goodness-of-fit statistics presented in Table 5.21 are taken directly from the AMOS output. Although there is an array of fit indexes generated by AMOS, only those that are appropriate for the assessment of model fit are presented. Hence, the first sets of fit statistics that need to be considered are NPAR (number of parameters), CMIN (minimum discrepancy), DF (degrees of freedom), P (probability value), and CMIN/DF. The value under CMIN also referred to as x^2, represents the

likelihood ratio test statistic. Hence, the first-order CFA model yielded a x^2 value of 1514.26, with 833 degrees of freedom and a probability of less than .0001 ($p < .0001$), thereby suggesting that the fit of the data to the hypothesized model was not entirely sufficient. However, the value of x^2 tends to be inflated when the sample size is large (Jöreskog & Sörbom, 1993). In other words, the large sample size is not supportive in terms of obtaining precise parameter estimates. The discovery of well-fitting hypothesized models, where the value of x^2 approximates the degree of freedom, in most SEM research, has proven to be unrealistic (Byrne, 2013). Another fit statistic to refer to in the first set is CMIN/DF. The model (figure 5.1) has yielded a value of 1.818 (Table 5.10). The acceptable value for this ratio indicating a perfect model fit should be < 5.00, and the model has obtained a value of 1.920, indicating a good model fit.

The first sets of fit indices, denoting the fitness of the model from the output, are RMR, GFI, AGFI, and PGFI. RMR stands for root mean square residual, where the value less than 0.05 indicates a well-fitted model. The model has generated a value of 0.06 indicating an average fit. The next fit index in the same set is GFI, which stands for goodness of fit, where the value ranges from 0 to 1.00. A value close to 9.00 or above indicates a well-fitted model. The hypothesized model has generated a value of 0.721, which is quite close to 0.90, indicating that the hypothesized model sufficiently explains the sample data. Another fit index is AGFI, which adjusts the number of degrees of freedom in the hypothesized model; the value ranges from 0 to 1.00. A value close to 0.900 or above indicates a well-fitted model. The mode has generated a value of 0.683, indicating an average fit.

The next groups of fit statistics indicating model fit in the AMOS output are labeled as NFI, IFI, RFI, and CFI. Although NFI has been the most commonly used fit index to determine mode fit, it has shown a tendency to underestimate fit in small samples (Byrne, 2013). Hence, CFI was proposed. The values for both the NFI and CFI range from zero to 1.00 and the value close to or above 0.95 is considered as representative of a well-fitting model (Byrne, 2013). Hence, the value between .70 and .90 is considered a good fit. The model has produced an NFI and CFI value at .648 and .800, which is quite close to the benchmark representing average fitting, given the small sample size. Another fit index in the same set is the relative fit index (RFI), which is a derivative of NFI. The value ranges from 0 to 1.00, as specified

by Hu and Bentler (1999); values that are close to .95 indicate superior fit. The first-order model yielded an RFI value of .618, indicating a mediocre fit. However, in the incremental index of fit (IFI) developed by Bollen and research (1989), which addresses the issue of parsimony and sample size, the model yielded the IFI value of .801, which is quite close to 0.90, indicating a well-fitted model.

The next cluster of fit indexes, that have addressed the issue of model parsimony are PRATIO, PNFI, and PCFI. Proposed by James, Mulaik and Brett (1983), this index has subsequently been relative to other indexes such as PGFI, which has taken the complexity of the model into account in the assessment of model fit (Byrne, 2013). The model yielded a PRATIO value of .922, which is slightly above the benchmark of 0.90, indicating a well-fitted model.

The next set of fit statistics that are dealt with in this section is RMSEA, which stands for root mean square of approximation. This fit index takes the error of approximation in the population into account, and questions "How well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available?" (Browne, 1993). The RMSEA index is sensitive to several estimated parameters in the model, i.e., the complexity of the model is taken into account. Thus, a value below .05 indicates a good fit, and values as high as .08 denote reasonable errors of approximation in the population (Browne, 1993). However, citing the cutoff point of .08, MacCallum, Browne and Sugawara (1996) proposed that values ranging from .08 to .10 indicate a mediocre fit, and those beyond .10 indicate a poor fit. The first-order CFA model yielded an RMSEA value of 0.070 (< .08), which suggests that the model is indeed well-fitted.

Table 5.22 Statistical Results of Various Indices for CFA

Indices	**Criteria**	**Statistical result**
Chi-square	$P \geq 0.05$	.000
CMIN/DF	Close to 1.00	1.818
GFI	≥ 0.90	0.721
AGFI	≥ 0.90	0.683
PRATIO	≥ 0.90	0.922

Indices	Criteria	Statistical result
IFI	≥ 0.90	0.804
CFI	≥ 0.90	0.800
RMR	< 0.05	0.069
RMSEA	≤ 0.05 well-fitted; ≤ 0.08 fitted	0.07

As mentioned above, the application of CFA is to confirm that the indicators sort themselves into factors in the way that the researcher has linked the manifesting variables to the unobserved variables. CFA is one of the important steps in SEM, as SEM is a statistical methodology that assimilates the confirmatory approach to the examination of a structural theory bearing on some event. Confirmatory factor analysis in structural equation modeling is used in determining the role of measurement error in the model, to validate a multifactorial model, and to examine the group effects on the factors. Applying CFA to analyzing the relationship between observed and unobserved variables, the main goal of CFA rests on examining how well the manifesting variables scale the hypothesized latent variables and constructs and confirm the fit of a proposed model. The cut-off value for the observed variables to be loaded onto each latent variable, for this study, was greater than .30. The results from the analysis are conducive to concluding that the latent variables are valid underlying constructs for the manifesting variables and that these variables represent a reliable scale of the latent variables.

Table 5.23 Goodness-of Fit Statistics of the CFA: The Results of the CFA Loadings and the Final Sets of Observed Variables Regarding the Latent Variables

Variables	Indicators	Factor Loadings	Factor Score Weights	P value
Perceived dependency	pd1	1.000		.000
	pd3	1.143	.162	.000
	pd4	1.230	.170	.000
	pd5	.888	.156	.000
Structural Governance	input1	1.000		.000
	input2	.972	.104	.000
	risk1	.808	.096	.000
	risk2	.735	.104	.000
	risk3	.758	.105	.000

Variables	Indicators	Factor Loadings	Factor Score Weights	P value
Relational Governance	comfreq1	1.000		.000
	trus1	1.474	.335	.000
	trus3	1.574	.351	.000
	trus4	1.305	.329	.000
	trus5	1.664	.363	.000
	trus6	1.966	.414	.000
	eascomm1	1.246	.304	.000
	eascomm2	1.241	.316	.000
Exchange of Information	exg1	1.000		.000
	exg2	1.091	.109	.000
	exg3	1.088	.107	.000
	exg4	1.030	.117	.000
	exg6	.865	.109	.000
	exg8	.705	.109	.000
Exchange performance	satis1	1.000		.000
	stais2	1.091	.157	.000
	satis3	1.110	.152	.000
	satis4	1.138	.184	.000
	satis7	.916	.149	.000
	coop1	.596	.141	.000

Hence, it is concluded that the proposed first-order CFA model accurately accounts for the variance and covariance in the data and that the proposed model satisfactorily explains the relationships between the observed variables and their respective constructs. Additionally, as shown in Table 5.22, all of the indicators were significantly related to their respective underlying construct (p-value <0.05). The significance of the factor loading provides support for the convergent validity of the respective scales (Byrne, 2013). For this study, all of the reliability estimates have exceeded the minimum threshold of 0.30, suggesting that the manifesting variables were significant and reliable measures of the latent variables being applied. Having achieved an adequate fit of the first-order CFA model (figure 5.1), the next step is to perform a model fit for the proposed conceptual framework. Hence, the next section deals with the fit of the full SEM.

5.4 Evaluation of the Hypothesized Model (Full SEM)

This section deals with the evaluation of the hypothesized model; hence two major analyses are covered in this section. First is the assessment of the proposed

conceptual model. The proposed model, as described in Figure 6, answers how structural governance mechanisms such as input-related agreements, and risk-related agreements create a domain where relational governance mechanisms such as trust can thrive. The hypothetical model also proposes how three different perspectives—RDT, TCE, and SET—can lead to the formation of successful construction companies and material suppliers. Second, is the examination of the structural model that involves the significance of the coefficients. In other words, the results of the relationships between the exogenous and endogenous variables, as well as the relationships between the endogenous variables are described in this section.

5.4.1 The Assessment of the Proposed Conceptual Model Fit

Considering that this is a preliminary step in the structural equation model, it is important to assess the overall model fit with one or more goodness-of-fit measures. AMOS provides an array of fit indexes that examine the goodness-of-fit of the model; however, only those that are appropriate to this study are presented. Hence, the first set of indexes that are presented here are NPAR (number of parameters), CMIN (minimum discrepancy), DF (degrees of freedom), P (probability value), and CMIN/DF. The value under CMIN also referred to as x^2, represents the likelihood ratio test statistic. Hence, the latent variable model yielded x^2 value of 492.881, with 348 degrees of freedom and a probability of less than .0001 ($p < .0001$), thereby suggesting that the fit of the data to the hypothesized model was not entirely sufficient. However, x^2 has a limitation, as this index assumes that the model fits perfectly in the population (Byrne, 2013). In other words, the value of x^2 tends to be inflated when the model does not hold and when the sample size is large (Jöreskog & Sörbom, 1993). Further, the large value x^2, which is relative to the degrees of freedom, indicates a need to modify the model to fit the data. Hence, in the words of Byrne (2013), the "findings of well-fitting hypothesized models, where the x^2 value approximates the degree of freedom, have proven to be unrealistic in most SEM empirical research." Addressing the x^2 limitation, over the years, there has been the development of other fit indexes that have taken a more pragmatic approach to the evaluation process (Byrne, 2013). One of the fit indexes that has addressed the limitation of x^2 is CMIN/degrees of freedom. The

hypothesized model has achieved the CMIN/df value of 1.42, which is below the cut-off value of < 5 and < 3, indicating a well-fitted model.

The first sets of the fit indices, denoting the fitness of the model from the output are RMR, GFI, AGFI, and PGFI. RMR stands for root mean square residual, where the value less than 0.05 indicates a well-fitted model. The model has generated a value of 0.059, indicating an average fit. The next fit index in the same set is GFI, which stands for goodness-of-fit, where the value ranges from 0 to 1.00. The value close to 9.00 or above indicates a well-fitted model. The full LV model has generated a value of 0.848, which is quite close to 0.90, indicating that the hypothesized model sufficiently explains the sample data. Another fit index is AGFI, which adjusts several degrees of freedom in the hypothesized model; the value ranges from 0 to 1.00. A value close to 0.900 or above indicates a well-fitted model. The mode has generated a value of 0.809 indicating a good fit.

The next sets of fit indexes indicating model fit are NFI, IFI, RFI, and CFI. NFI, which stands for normed fit index, has been the most chosen index in terms of its practical basis (Byrne, 2013). The proposed hypothesized model has yielded an NFI value of .787, which is quite below the cut-off value of .90, indicating a mediocre fit. However, NFI has often been criticized for underestimating fit in small samples (Byrne, 2013). Hence CFI, which stands for the comparative fit index, was proposed by Bentler (1990) (Byrne, 2013). For a well-fitting model, the value of CFI should be either close to or greater than .900. The proposed model has yielded a CFI value of .924, indicating that the hypothesized model sufficiently explains the sample data.

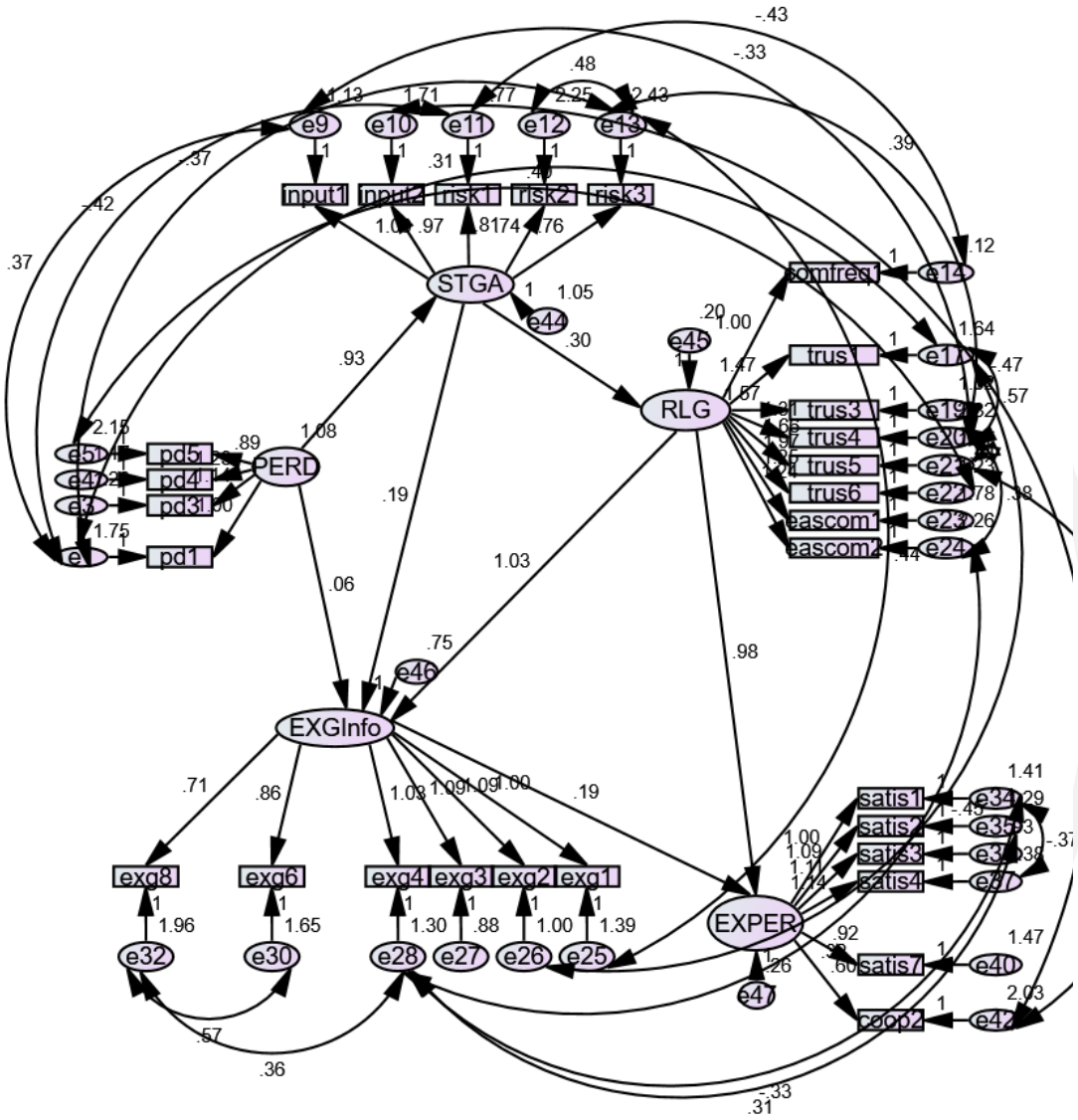


Figure 5.2 SEM Of the Proposed Conceptual Framework

Table 5.24 Statistical Results of The Various Indices for SEM

Indices	**Criteria**	**Statistical result**
Chi-square	$P \geq 0.05$	.000
CMIN/DF	Close to 1.00	1.41
GFI	≥ 0.90	0.848
AGFI	≥ 0.90	0.809
PRATIO	≥ 0.90	0.857
IFI	≥ 0.90	0.926
CFI	≥ 0.90	0.924
RMR	< 0.05	0.059
RMSEA	≤ 0.05 well fitted; ≤ 0.08 fitted	0.050

Another fit index in the same set is the relative fit index (RFI), which is a derivative of the NFI (Byrne, 2013). The value ranges from 0 to 1.00, as specified by Hu and Bentler (1999), and values that are close to .90 indicate a superior fit. The proposed hypothesized model yielded an RFI value of .752, indicating an above-average fit. Another fit index, the incremental index of fit (IFI), developed by Bollen and research (1989), which addresses the issue of parsimony and sample size, has proven to be a more acceptable fit index; the LV model yielded the IFI value of .926, which is above to 0.90 indicating a well-fitted model. This index was developed to address the issue of parsimony and sample size (Byrne, 2013).

The next cluster of fit indexes that have addressed the issue of model parsimony are PRATIO, PNFI, and PCFI. Proposed by James, Mulaik and Brett (1983), this index has subsequently been relative to other indexes such as the PGFI, which has taken the complexity of the model into account in the assessment of model fit (Byrne, 2013). The model yielded a PRATIO value of .857, which is close to the benchmark of 0.90, indicating a well-fitted model.

The final set of fit statistics that are dealt with in this section is the RMSEA, which stands for root mean square of approximation. As already explained in section 5.3.3, the RMSEA index is sensitive to the number of estimated parameters in the model, i.e., the complexity of the model is taken into account. Thus the value below

.05 indicates a good fit, and values as high as .082 denote reasonable errors of approximation in the population (Browne, 1993). However, citing the cutoff point of .08, the values ranging from .08 to .10 indicating mediocre fit, and those greater than .10 indicating poor fit, were proposed by MacCallum, Browne and Sugawara (1996). The proposed model yielded an RMSEA value of 0.050 (< .08), also close to the first cut-off value of 0.05, which suggests that the model is indeed well-fitted.

5.4.2 The Analysis of the Structural Model

In this section, the theoretical relationships between the underlying latent variables will be assessed. One of the prime evaluations of SEM lies in the significance of the estimated coefficients. The results for the various structural equations are elaborated in Table 5.24

Figure 5.2 exhibits the relationship between the exogenous and endogenous variables, as well as the relationship between the endogenous variables. Figure 5.2 also presents the significance of all the relationships. For all hypotheses to be confirmed the "p" value must be less than 0.05. One of the prime advantages of using SEM is, that it provides the user with accessibility to indirect and total effects, along with direct effects between the exogenous and endogenous variables. The direct, indirect, and total effects among the variables in the proposed model, together with the output of the causal relationship in the hypothesis testing, are presented in Table 5.13.

This study proposes how three different perspectives—RDT, TCE, and SET—can form an inter-organizational exchange relationship between two different organizations. Moreover, the prime objective of this study is to show how different mechanisms of structural governance such as the input-related agreement and the risk-related agreement can create a domain where various mechanisms of relational governance such as trust can thrive. Hence, except for the variable exchange of information, none of the variables in the model has a direct effect on exchange performance, which is represented by two variables collaboration and buyer's satisfaction.

Table 5.25 presents the direct and indirect effects among the variables with the path coefficient values represented by β. The variable PERD has a direct effect

on the variable structural governance (STGA). The path coefficient value of the effect is $\beta = .925$.

Table 5.25 The Path Coefficient of the Analytical Model of the Inter-Organizational Relationship between Construction Companies and the Material Supplier.

			Estimate	S.E.	C.R.	P	Label
STGA	<---	PERD	.925	.143	6.469	***	
RLG	<---	STGA	.299	.068	4.385	***	
EXGInfo	<---	PERD	.064	.137	.469	.639	
EXGInfo	<---	RLG	1.029	.310	3.319	***	
EXGInfo	<---	STGA	.189	.133	1.420	.156	
EXPER	<---	EXGInfo	.188	.082	2.304	.021	
EXPER	<---	RLG	.976	.267	3.652	***	
pd1	<---	PERD	1.000				
pd3	<---	PERD	1.143	.162	7.057	***	
pd4	<---	PERD	1.230	.170	7.216	***	
pd5	<---	PERD	.888	.156	5.698	***	
input1	<---	STGA	1.000				
input2	<---	STGA	.972	.104	9.335	***	
risk1	<---	STGA	.808	.096	8.386	***	
risk2	<---	STGA	.735	.104	7.071	***	
risk3	<---	STGA	.758	.105	7.237	***	
comfreq1	<---	RLG	1.000				
trus1	<---	RLG	1.474	.335	4.406	***	
trus3	<---	RLG	1.574	.351	4.481	***	
trus4	<---	RLG	1.305	.329	3.973	***	
trus5	<---	RLG	1.664	.363	4.587	***	
trus6	<---	RLG	1.966	.414	4.746	***	
eascom1	<---	RLG	1.246	.304	4.101	***	
eascom2	<---	RLG	1.241	.316	3.924	***	
exg1	<---	EXGInfo	1.000				
exg2	<---	EXGInfo	1.091	.109	10.026	***	
exg3	<---	EXGInfo	1.088	.107	10.156	***	
exg4	<---	EXGInfo	1.030	.110	9.343	***	
exg6	<---	EXGInfo	.865	.109	7.912	***	
exg8	<---	EXGInfo	.705	.109	6.449	***	
satis1	<---	EXPER	1.000				
satis2	<---	EXPER	1.091	.157	6.944	***	
satis3	<---	EXPER	1.110	.152	7.286	***	
satis4	<---	EXPER	1.138	.184	6.170	***	
satis7	<---	EXPER	.916	.149	6.135	***	
coop2	<---	EXPER	.596	.141	4.215	***	

Likewise, the variable STGA has a direct effect on the variable relational governance (RLG). The path coefficient value of the direct effect is β = .299. The variable STGA also has a direct effect on EXGInfo supported by a path coefficient value of β = .189. As driven by the conceptual framework and theories, the variable RLG has a direct effect on the variable EXGInfo. This effect has been supported by a path coefficient value (β = 1.029). Inter-organizational theory argues that the trust between parties in a relationship can lead to a substantial exchange of resources and this theory also argues that the substantial exchange of information can lead to satisfaction between parties and can create a domain for collaboration. Hence the variable EXGInfo has a direct effect on exchange performance (EXPER). The path coefficient value for both effects is .188.

Table 5.26 The Path Coefficient Among the Variables in Terms of Total Direct and Indirect Effects

Variables	Effects	PERD	STGA	RLG	EXGInfo	EXPER
STGA	DE	.925	-	-	-	-
	IE	-	-	-	-	-
	TE	.925	-	-	-	-
RLG	DE	-	.299	-	-	-
	IE	.277	-	-	-	-
	TE	.277	.299	-	-	-
EXGInfo	DE	.064	.189	1.029	-	-
	IE	.460	.308		-	-
	TE	.524	.497	1.029	-	-
EXPER	DE	-	-	.976	.188	-
	IE	.369	.385	.193	-	-
	TE	.369	.385	1.169	.188	-

According to RDT, the perceived dependency of the party in the inter-organizational relationship can also lead to communication, and communication between parties can create a trust that further can develop a milieu where the exchange of information can take place, which in turn brings satisfaction and collaboration between the parties. Hence, the variable PERD has an indirect effect on variables such as relational governance, exchange of information, and exchange performance. Likewise, TCE proposes that organizations enter alliances to reduce transaction costs, both ex-ante and ex-post, arising out of a dispute. Hence, the variable structural governance has an indirect effect on variables such as the exchange of information and the exchange of performance. Likewise, the variable relational governance has an indirect effect on the variable exchange performance.

5.5 Results of the Hypotheses Testing

This section elaborates on the relationship of the variables proposed in the conceptual framework of the present study. The SPSS Amos program was applied to examine the seven hypotheses. The findings from the structural equation models (SEMs) were combined to form a path to show how structural governance can create a domain where relational governance can thrive (figure 5.3)

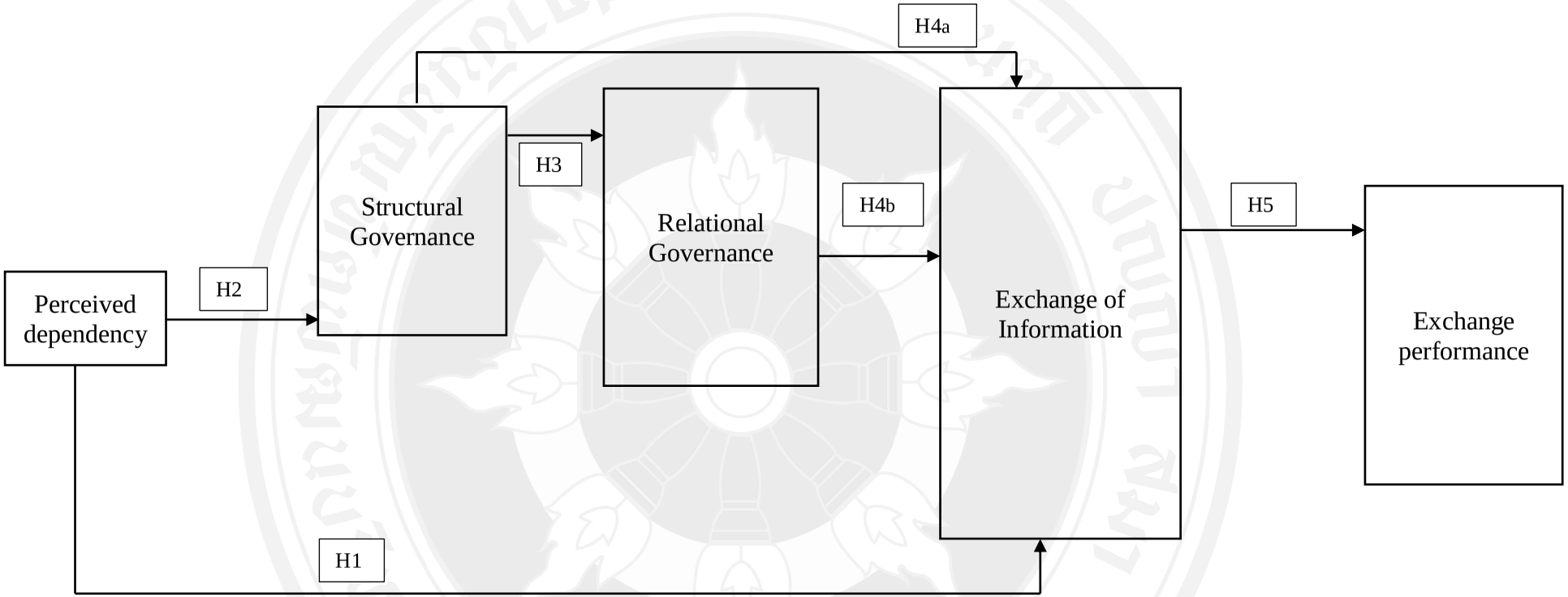


Figure 5.3 The Final Structural Model to show how Mechanisms of Structural Governance are Necessary to provide Domain where Relational Governance can Thrive.

H1: Perceived dependency has a significant positive correlation with the variable resource exchanges and is a significant predictor of resource exchange.

Perceived Dependency (PERD)	⟶	Exchange of Information (EXGInfo)	.524

Hypothesis 1 proposes that perceived dependency (PERD) will be positively associated with resource exchange; however, the result is not statistically significant ($\beta = .524$; $p > 0.05$). Hence, hypothesis 1 is rejected.

H2: Perceived dependency has a significant positive correlation with the structural governance mechanism (contractual and non-contractual agreements) and is a significant predictor of structural agreements.

Perceived Dependency (PERD)	⟶	Structural Governance (STGA)	.925

Hypothesis 2 postulates that perceived dependency will positively correlate or have an effect on structural governance, which includes both the input-related agreement and risk-related agreement. As expected, the path leading from perceived dependency to structural governance ($\beta = .925$; $P < 0.05$) is statistically significant in the expected direction. The greater the extent of the dependency of parties on a contract, the more likely they are to form an inter-organizational relationship by drafting a contractual agreement.

H3: There is a positive relationship between structural agreements and relational governance mechanisms. In other words, both contractual and non-contractual agreements are necessary to provide a domain where the mechanism of relational governance can thrive.

Structural Governance (STGA)	⟶	Relational Governance (RLG)	.299

Likewise, the hypothesis connecting risk-related agreement to frequency of communication in Hypothesis 3 is supported by the findings. The path leading from

structural governance to relational governance (β = .299; P < 0.05) was statistically significant in the expected direction. It has been argued that in an alliance the mechanisms of structural governance and relational governance can be more complimentary rather than substitutional. Hence, this study proposes that the mechanisms of structural governance can provide a domain where relational governance can thrive. The result of the analysis thus indicates that risk-related agreements, one of the governing mechanisms of structural governance, had a direct impact on the frequency of communication, which is one of the mechanisms of relational governance.

Hypothesis 4a: In a successful buyer and supplier relationship, the structural governance mechanisms are positively related to the exchange of information.

Structural Governance (STGA)	⟶	Exchange of information (EXGInfo)	.189

This study proposes that both structural and relational governance complement each other rather than supplement each other. Indeed, both are required for the smooth functioning of the exchange relationship, which includes the exchange of various kinds of resources, including vital information. However, the path leading from structural governance to the exchange of information (β = .189; p > 0.05) was not statistically supported. It has been proposed that parties before entering an inter-organizational relationship draw a formal contract/agreement, a governing mechanism of structural governance, to ensure the smooth functioning of the alliance. However, it is unlikely that a contractual agreement solely determines the future transaction, or delineates the parties in the transaction to manifest altruistic behavior towards each other. As has been stated, it takes parties in alliances to build trust, and a series of communications between parties will gradually develop an environment favorable for trust.

Hypothesis 4b: In a successful buyer and supplier relationship relational governance mechanisms are positively related to the exchange of information.

Relational Governance (RLG)	⟶	Exchange of information (EXGInfo)	1.029

Likewise, the path leading from relational trust to the exchange of information (β = 1.029; $p < 0.05$) was statistically significant in the expected direction. It has been argued that parties to an agreement are rationally bound; hence the contract they draw is assumed to be incomplete. Apart from the structural governing mechanism, it has been argued that even relational governance is equally important for the smooth functioning of an alliance. The results of the analysis thus indicated that relational trust has a direct effect on the exchange of information, thus supporting hypothesis 4b.

Hypothesis 5: The extent of the information exchanged between contractor and material supplier is positively related to exchange performance, measured through the buyer's satisfaction and collaboration.

Exchange of Information (STGA)	⟶	Exchange performance (EXPER)	.188

Hypothesis 6 postulates that there will be a positive impact of the exchange of information on the latent variable exchange performance measured by two aspects: collaboration and the buyer's satisfaction. As expected, the path leading from the exchange of information to exchange performance (β = .188; $p < 0.05$) was statistically significant, thus supporting hypothesis 5. It is imperative that in any exchange relationship, the sharing of information between buyer and supplier is unavoidable. The sharing of proper information can lead to efficiency in both management and product development. As construction is a complex business with multiple aspects, it becomes important for buyers they receive substantial information from their suppliers. Such information can be useful in developing projects with minimum costs. Likewise, it is also inescapable for suppliers to receive information from buyers, and the right information can lead to efficiency and collaboration between parties in the exchange relationship.

Table 5.27 The Summary of the Results from the Hypothesis Testing

Hypotheses	Findings
$\boldsymbol{H_1}$: Perceived dependency has a significant positive correlation with the variable resource exchanges and is a significant predictor of resource exchange.	Not Supported
$\boldsymbol{H_2}$: Perceived dependency has a significant positive correlation with the structural governance mechanism (contractual and non-contractual agreements) and is a significant predictor of structural agreements.	Supported
$\boldsymbol{H_3}$: There is a positive relationship between structural agreements and the relational governance mechanism. In other words, both contractual and non-contractual agreements are necessary to provide a domain where the mechanism of relational governance can thrive.	Supported
$\boldsymbol{H_{4a}}$: In a successful buyer and supplier relationship structural governance mechanisms are positively related to the exchange of information.	Not Supported
$\boldsymbol{H_{4b}}$: In a successful buyer and supplier relationship, the relational governance mechanisms are positively related to the exchange of information.	Supported
$\boldsymbol{H_5}$: The extent of information exchanged between the contractor and material supplier is positively related to exchange performance measured by two performance aspects, the buyer's satisfaction and collaboration.	Supported

5.6 Chapter Summary

This chapter describes how structural governance complements relational governance. In other words, with empirical evidence, it was proposed that structural governance can create a domain where relational governance can thrive. Hence, hypothesis 3, which postulated that there is a positive correlation between structural governance and relational governance, was found to be significant ($\beta = .299$; $P < 0.05$). The resource dependency perspective assumes that firms and organizations enter an alliance/inter-organizational relationship in pursuit of resources that they cannot generate solely. It is also likely that the buyer firm can enter an alliance with a supplier firm to ensure an uninterrupted supply of resources that they alone cannot produce. Hence, hypothesis 2, which postulated that perceived dependency has a significant correlation with structural governance, was found to be statistically significant, as the path leading from perceived dependency to an input-related agreement, and a risk-related agreement, was found to be statistically significant. However, hypothesis 1, which postulated that perceived dependency has a direct relationship with the exchange of information, was not found to be statistically significant ($\beta = .064$; $p > 0.05$). It has been assumed that the parties to a contract, to reduce both ex-ante and ex-post transaction costs, enter inter-organizational relationships. Hence, apart from drafting formal agreements, they develop trust which in turn enhances the smooth functioning of the alliance. Hypothesis 3, which postulated that structural governance has a positive relationship with relational governance, was found to be statistically significant (.299; $P < 0.05$). This study also proposes that in the inter-organizational relationship between two parties, both structural governance (input-related agreement and risk-relational agreement) and relational governance (trust) play a significant role in enhancing the coordination between the parties to a contract. Hence, hypothesis 4b, which postulated that in a successful relationship between buyer and supplier, relational governance is positively related to resource (information) exchange, was found to be statistically insignificant. However, hypothesis 4a, which postulated that structural governance has a positive direct effect on the exchange of information was found to be statistically insignificant. Finally, Hypothesis 5, which postulates that the extent of information exchanged between contractor and material supplier is positively related to exchange

performance measured by dual aspects, the buyer's satisfaction and collaboration, was also found to be statistically significant.

Apart from hypothesis testing, this chapter also conducted various statistical analyses using several statistical tools. A normality test of all the variables was conducted using IBM SPSS. The normality test of all these variables produced mixed results, as some variables were found to be normally distributed to some extent, whereas others showed that the scores were clustered at the high end of the right-hand side for skewness. A reliability test for all the manifesting variables was conducted using Cronbach's alpha coefficient, and all of the Cronbach's alpha coefficients for all measuring items were found to be above satisfactory. Multicollinearity, to ensure that all latent variables were not correlated, was conducted using two statistical techniques: VIF and tolerance. The result of both statistics was satisfactory, indicating no correlation. For factor analysis, CFA was conducted. To confirm the model fit of the results, several statistical indexes (CMIN/DF, IFI, CFI, PRATIO, and RMSEA) were relied on.

CHAPTER 6

CONCLUSION AND DISCUSSION

The final chapter is structured in five sections. The first section discusses the results of the studies concerning the quantitative data of the proposed model for measuring the efficacy of structural governance and relational governance in terms of the exchange relationship between construction companies and material suppliers, amid the theoretical and applied implications of the findings. The second section delivers the conclusion of the overall study. The third section discusses the limitations of the study in terms of its research design, generalizability, and measurement. The fourth section elaborates on the practical and theoretical implications of the study. The last section presents suggestions for future study.

6.1 Discussion and Managerial Suggestions

Construction companies in Nepal are involved in many government projects and they have contracts to build highways, river dams, public utilities, government buildings, etc. This industry, for many decades, has played a significant role in the infrastructure development of Nepal besides other industries such as commercial banks and other government and private entities. However, this industry has not gone without several challenges and several problems have created a challenge to this industry. The first major problem is the late announcement of annual budgets due to sluggish cash-flow procedures. The delay in annual budgets postpones government spending, precluding construction companies from completing their jobs on time. Not only do delay in budgets affect their job but also inhibit them from meeting their financial obligation towards their supplier as well as lenders. The second is the growing scarcity of construction labor. In the hope of getting better jobs abroad, it has been observed that laborers are migrating to third-world countries such as Qatar, Dubai, and Saudi. The third is that the construction companies often have to struggle to procure the

necessary goods to complete their jobs. Nepal has to import goods since a substantial number of goods are not manufactured locally. These goods involve heavy construction machinery, power generators, sophisticated construction tools, and numerous other materials. Also, some raw materials that are required for local manufacturing are imported from neighboring countries. There are also other issues that the construction industry faces regularly. However, this study merely focuses on the above-mentioned problems.

Often organizations enter an inter-organizational relationship with another organization to procure resources that they alone cannot develop. These resources are inclusive of knowledge, technical know-how, information, and various kinds of tangible resources. Likewise, a buyer organization can also enter an alliance with a supplier organization to procure goods that they cannot solely produce. They also enter an inter-organizational relationship with a supplier to ensure an uninterrupted supply of goods at a reasonable price. Hence, to circumvent the various challenges such as late annual budgets, and other contingent scenarios such as the scarcity of construction material in the future caused by temporary trade embargos, construction companies often enter a buyer-supplier relationship with a supplying company. Therefore, this study has combined three perspectives (TCE, RDT, SET) to explain the inter-organizational relationship between construction companies and material suppliers.

6.1.1 Understanding Perceived Dependency as a Key Antecedent Factor in the Inter-Organizational Relationship where Effective Exchange of Resources such as the Exchange of Vital Information takes Place between Buyer and Supplier

H1: Perceived dependency is positively associated with the variable exchange of information.

It has been predicted that perceived dependency will have a direct effect on the variable exchange of information or it is a significant predictor of the exchange of information; however, the empirical findings indicate that perceived dependency does not have a direct effect on the variable exchange of information (H1: $\beta = .064$; $p > 0.05$). It appears plausible that mere dependency does not lead to the exchange of vital

or sensitive information, and it requires a certain depth of interaction between parties which can only be provided by trust. This study proposes that it is structural governance that opens a domain where relational governance can thrive. Hence, this adversarial result of hypothesis 1 leads to three assumptions.

First, for parties to share sensitive information or even resources, it requires a series of interactions between them. Only then is it presumed that after a series of interactions, the parties to a contract have developed trust. Without trust, it becomes impossible for parties to exchange all kinds of resources. Past studies on alliances have also revealed that trust is a decisive factor in creating a successful alliance. An alliance is deemed successful when there exists a proper exchange of knowledge, information, and tangible resources. The mere dependency of one party does not necessarily lead to the exchange of vital information. As parties to a contract are aware of the risks associated with alliances, such as the leaking of confidential information, and possible theft of intellectual property, they are reluctant to immediately delve into the exchange of information without knowing their exchange partner.

Second, not all parties to a contract would like to take their difference to a court for settlement, as they are aware that the odds are not always in their favor. Williamson (1979) has argued that firms and organizations enter alliances to reduce the transaction costs arising out of disputes and court settlements. A court settlement can incur heavy costs to both the buyer and supplier. Moreover, drafting formal contracts can be costly if the parties are new to each other. Hence, the parties are aware that the mere draft of a formal agreement does not necessarily preclude partners from manifesting opportunistic behavior. There are also chances that the parties in an exchange relationship can be exposed to the risk of leaking confidential information. Without trust, an exchange relationship between buyer and supplier cannot reach its full potential. Hence, it becomes imperative that both buyer and supplier build trust before the exchange of resources.

Larson (1992) proposed the process model of network formation, which accentuated the significance of reputation, trust, reciprocity, and mutual interdependence in describing the dynamic evolution of the exchange relationship between firms. According to him, mere economic gain such as the partner's skill and capabilities, is not the determining factor that leads firms to enter an alliance. Social

aspects that are inclusive of personal reputation and prior relations; and a firm's reputation is an equally important factor that influences firms in forming a network dyad. Hence, organizations, to form socially embedded ties, must go through a series of phases, and only then there occurs an uninterrupted exchange of resources that are inclusive of both tangible and intangible resources.

For the buyer and supplier to enter socially embedded ties, it is suggested that both parties in an exchange must give priority to social aspects such as personal reputation, prior relation, and the firm's reputation, which are equally important amid economic gain. Once trust is developed through accumulated interactions, partners are less likely to rely on elaborative safeguards for specifying, monitoring, and enforcing agreements (Zaheer, McEvily, & Perrone, 1998). The solid interpersonal relationship at both the individual and organizational level provides a conducive environment for future economic exchange.

H2: Perceived dependency is positively associated with the structural governance mechanism (contractual and non-contractual agreements) and is a significant predictor of structural agreements.

As can be seen, the results of the data analysis supported hypothesis 2 confirming the relationship between perceived dependency and structural governance mechanisms (contractual and non-contractual agreements). Perceived dependency is positively related to structural governance at the 0.05 level of significance ($p < 0.05$) with a path coefficient value of 0.925. According to the RDT, in the pursuit of resources that they solely cannot develop, firms enter an alliance with another firm to ensure an uninterrupted supply of resources. Likewise, the theory also argues that a buyer can enter an inter-organization relationship with a supplier to procure goods that they cannot produce individually.

Construction companies are mostly service-oriented, which means that they have a contract to build. These companies in Nepal are mostly responsible for infrastructure development. However, they are not directly involved in the manufacturing of necessary materials, and they rely on supply companies. There are multiple aspects of dependency where construction companies must depend on the material supplier. It has been observed that their dependency can range from product delivery to field assistance from the supplier's end. Hence a long-term relationship

with an important supplier will ensure the supply of quality materials at reasonable prices.

To form inter-organizational relations with the supplier, they must draw a formal agreement to ensure that neither party is involved in opportunistic behavior such as shirking from their agreed responsibility. Structural governance, which constitutes input-related and risk-related agreements, is made before entering the exchange relationship with the supplier. This structural governance is derived from the perspective of TCE, which assumes that human beings are opportunistic, as stated earlier. Although construction companies are required to submit bank guarantees to the supplier to procure goods, they are also required to draw formal agreements, which address the necessary covenant that both buyer and supplier must follow.

6.1.2 Structural governance and relational governance complement rather than substitute each other.

H3: There is a positive direct association between structural agreements and the relational governance mechanism. In other words, both contractual and non-contractual agreements are necessary to provide a domain where the mechanism of relational governance can thrive.

According to hypothesis 3, a structural agreement will have a positive direct association with relational governance. Risk-related agreements and input-related agreements, which are the mechanisms of structural governance, will have a positive association with relational governance measured by three important aspects: frequency of communication, trust, and ease of communication. As expected, the paths leading from structural governance to relational governance were statistically significant in the expected direction ($\beta = .299$; $p < 0.05$). It can be assumed that a buyer firm must enter an agreement with the supplier firm to ensure that both parties strictly follow all of the covenants mentioned in the agreement. Doing so will increase the amount of communication between the two parties, as each party would frequently communicate with each other to settle on terms that they both agree on.

This argument is in line with previous studies where it has been found that in an alliance structural governance lays a foundation where relational governance can thrive.

Poppo and Zenger (2002), Tepic et al. (2011), and Garbade, Omta and Fortuin (2016) have argued that structural and relational governance complement rather than substitute each other. According to complementary formal agreements to some extent are incomplete due to the cost of writing clauses, limitation of enforceability by court, and limitation of an individual's cognitive ability. Hence, it is not possible for parties in the exchange relationship to pre-specify all future contingencies in a formal agreement (Zenger, Lazzarini, & Poppo, 2000). Likewise, in the buyer and supplier exchange relationship, both parties would prefer to draw a formal contract before entering any long-term project. As specified above, the formal agreement, due to the limitation of the individual's cognitive ability, becomes important for both parties to maintain social convention, such as frequent interaction, which is conducive to developing trust. Williamson (1979) also mentioned that firms enter inter-organizational relationships to reduce the transaction costs arising out of disputes and court settlements.

6.1.3 Understanding the importance of both structural and relational governance in an exchange execution.

H4a: In a successful buyer and supplier relationship structural governance is positively associated with the exchange of information.

Both structural and relational governance were hypothesized to have a direct positive association with the variable exchange of information. Governing mechanisms, such as the input-related agreement and risk-related agreement of structural governance were hypothesized to have a positive impact on the exchange of information. However, the path leading from structural governance to the exchange of information was found to be statistically insignificant ($\beta = .189$; $p < 0.05$). It can be assumed, as has already been discussed, that the written formal contract is incomplete and is unlikely to subsume every future contingent in one single draft. Hence the party in a transaction assumes trust as one of the major factors to facilitate exchange. Additionally, in the Nepalese context, there exist a considerable number of informal markets where parties are more comfortable with third-party arbitrage rather than court settlement. Hence, relations built through long-term commitment are more favored over formal agreements.

H4a: In a successful buyer and supplier relationship relational governance is positively associated with the exchange of information.

The prime objective of this study is to show how both structural and relational governance can be beneficial in the buyer and supplier exchange relationship. The significance of the written formal contract cannot be overlooked, however, citing the role of trust in an exchange relationship. Indeed, it has been argued that structural governance creates a domain where relational governance can thrive. The adaptability of a formal agreement can lead to the interaction between parties, as economic actions are embedded in the structures of social relations, and as no industry has a perfect market. The reciprocity between the parties is also important because each party needs to maintain its reputation in the market. The existence of social reciprocity on both ends can lead to trust, thus enhancing efficiency in the exchange relationship. The extent of sharing vital information also signifies that both parties trust each other, and mere formal agreements do not necessarily obligate each party to commit to reciprocity. Hence, as expected, the path leading from relational governance to the exchange of information was statistically significant ($\beta = .299$; $p < 0.05$) in the expected direction, confirming hypothesis 4a.

H 5: The extent of information exchanged between contractor and material supplier is positively associated with exchange performance, measured through the buyer's satisfaction and collaboration.

According to Hypothesis 5, it was posited that the exchange of information will positively affect exchange performance in terms of the buyer's satisfaction and collaboration. As posited, the path leading from the exchange of information to exchange performance was found to be statistically significant in the expected direction ($\beta = .188$; $p < 0.05$). The confirmed hypothesis indicated that for an exchange relationship between buyer and supplier to be successful, there must exist a proper exchange of information between parties that could lead to satisfaction and collaboration.

Like any other alliance, an exchange relationship is a hybrid mode of governance, which is neither a market nor a hierarchy. Hence, complete coordination is least expected, as well as autonomy. However, it has also been argued that with proper interaction between parties, where parties engage in social reciprocity lest their

reputation be damaged, trust between parties is likely to be built. Although the forefront written agreement is necessary to make all the duties and obligations crystal clear, a mere formal agreement does not ensure full collaboration in an exchange relationship. Hence, a factor is required that is a determinant for a successful exchange relationship. Trust between parties in an exchange relationship is a decisive factor built over a while. It has been argued that it takes a series of transactional exchanges and verbal as well as personal interactions for parties in a transaction to trust each other. This study proposes how structural governance creates a domain where relational governance can thrive. Therefore, in a nutshell, it argues that both formal agreements and trust are necessary for an exchange relationship to be successful. The next section presents the conclusion.

6.2 Conclusion

By integrating resource dependency theory (RDT), transaction cost economy (TCE), and social embedded theory (SET), this research attempts to explain the formation of the inter-organizational relationship between construction companies and material suppliers in Nepal. This research, to show how structural governance creates a domain where relational governance can thrive, investigates the intriguing adaptability of perceived dependency, structural governance, relational governance, the exchange of information, and exchange performance, consisting of buyer's satisfaction and collaboration. The proposed framework, which integrates the mechanism of structural governance and relational governance, contributes to the explanatory power concerning why the organization allies to perform better. Before testing the proposed hypotheses, reliability, validity, and uni-dimensionality were conducted to test the constructs, and structural equation modeling was used to analyze the conceptual model. Out of the six hypotheses, five were confirmed.

The results of the empirical findings reveal that the proposed model in this study has a significant interplay of both structural and relational governance to lead a path to a successful alliance between buyer and supplier. The result supports the assumption that how structural governance creates a milieu where trust, a governing mechanism of relational governance, can thrive. Hence: a) perceived dependency has only an

indirect effect on the exchange of information through structural and relational governance; b) structural governance, which consists of input-related agreements and risk-related agreements, has a direct effect on relational governance; and c) relational governance has a direct positive impact on the exchange of information.

By providing a better understanding of the interplay of structural and relational governance decisions associated with policies to encourage alliance in other sectors as well the present study provides aspiring construction companies and supplier organizations with useful insights. As a hybrid form of governance, alliances are about coordination and resource allocation across boundaries. The empirical findings have discovered that perceived dependency, an antecedent condition of alliance formation, can lead to written agreements (both formal and informal) between dyadic partners. In line with prior research concerning these constructs, the results of the study have strongly supported this argument. Specifically, it signifies that the perceived dependency of parties 1) leads to the formation of the buyer and supplier alliance; 2) enhances coordination with both structural and relational governance; and 3) builds trust through frequent communication and interaction to share pertinent and sensitive information. The importance of the direct and indirect total effects suggests, by adaptation of formal written agreement, which in turn can create a domain where relational trust can foster and ultimately result in improved performance for the alliance between construction companies and material suppliers. In terms of management implications, the results from the study can be fruitful regarding the following issues.

1) Goal compatibility: There is a need for short-term and long-term computability between buyer and seller. Without such compatibility, the alliance between buyer and supplier can go awry.

2) Synergy among parties in a transaction in terms of cultural and procedural routines is advantageous to both parties in an alliance. With such synergy the parties can be efficient, effective, and as a result more competitive in terms of obtaining new projects.

3) Openness and transparency are crucial in the buyer and supplier relationship as both parties are expected to bring honesty and diligence to the table. Such is the foundation where relational trust is built.

4) Sheer involvement and mutual benefit by balancing the contribution in the exchange relationship are necessary so that no single party dominates the exchange relationship. The absence of such a balance may result in the buyer making excessive demands knowing the dependency of the supplier or vice versa.

5) As the buyer and supplier exchange relationship is a hybrid of governance, it is necessary for both parties to learn each other's working culture or style of management or even adopt a new management style. Such compromises can be crucial in resolving conflicts without third-party arbitration.

6) Balancing governing mechanisms such as written agreements and focusing more on relational governance can avoid opportunism and can create innovative management styles to avoid all kinds of conflicts arising out of mismanagement.

In this research, it was found that perceived dependency does not have a direct impact on the exchange of information. This appears plausible since mere dependency on resources does not necessarily lead to the exchange of pertinent and sensitive information. For two different organizations in the exchange relationship to fully structurally couple, it requires a certain depth of interaction between boundary spanners in terms of structural governance and relational governance. This study provides further empirical validation for this emphasis by showing how structural governance mechanisms lay a foundation where relational governance can thrive. Moreover, the empirical evidence also suggests that both structural and relational governance are equally significant in the proper exchange of resources, which includes the sharing of vital information. The success of an exchange relationship, which consists of the buyer's satisfaction and collaboration, is due to the proper extent of information exchange. The significant indirect effects of perceived dependency on the exchange of information provide empirical evidence for the fact that although this construct may not have a direct impact on the exchange of information, it is an antecedent condition to form an exchange relationship, as this construct has a positive direct association with structural governance.

The buyer and supplier exchange relationship falls under the hybrid form of governance, where price does not serve as a sufficient statistic to take the right action should there be any changes in the demand and supply of a commodity. Supported by neoclassical contract law and excuse doctrine, under this mode of governance parties

are bilaterally dependent to a non-trivial degree, and are relieved from strict law enforcement. A formal contract is assumed to be incomplete, and long-term contracts are supported by additional safeguards. All kinds of disputes arising out of resentment or misunderstandings are settled by introducing third-party arbitrators, or among the parties themselves. This mode of governance also assumes that the identities and reputations of the parties to a contract also matter before entering a bilateral agreement.

A formal contract, under the hybrid mode of governance, is assumed to be incomplete, and this assumption is supported by the empirical findings. There is a direct effect of risk-related agreement on the frequency of communication. It therefore is imperative that both parties to a contract interact to a certain level where they can sort out their differences. Doing so can build trust in a matter of time. A written formal agreement merely serves as a formality, as other determinants have caused a successful buyer-supplier relationship. One of the important factors is relational trust, as there is a direct positive association between relational trust and the exchange of information. Another assumption, where price does not serve as a sufficient statistic to take the right action, is also supported. The exchange of information has a direct positive association with the buyer's satisfaction and collaboration. Under the hybrid form of governance, trust is an important governing mechanism that ensures proper coordination, where the parties to a contract are loyal to each other and are driven by a belief that each party is being honest. The third assumption that the identities and the reputation of the parties to a contract also matter is supported, as there is a direct effect of relational trust on the exchange of information. From the empirical findings, it has also been understood that disputes between parties are generally settled by introducing a third-party arbitrator or among the parties themselves rather than resorting to a court settlement.

In a nutshell, this study shows that the enhancing arm's length contract to a successful alliance hinges on four elements: 1) perceived dependency is an antecedent condition, in forming an exchange relationship, as it motivates the parties to contract to draft a written agreement to encourage both parties to fulfill their obligations; 2) and although formal written agreements are required as they serves as a covenant to ensure that the parties to a contract do not manifest opportunistic behavior, they are not the sole requirement; indeed, the empirical evidence has suggested it creates a domain where a relational governance can thrive; 3) relational trust between parties is a must,

as it is an alternative form of governance, where it fills the gap between incomplete contracts and successful exchange relationship; for parties to build trust, it requires periodic interaction, both formal and informal, and the empirical findings have supported this argument; and 4) both structural and relational governance are equally important for the mere arm's length contract between buyer and supplier to evolve into a buyer-supplier exchange relationship or alliance. The empirical findings have supported the major argument of this research that structural and relational governance complement each other rather than substitute each other, and hence the interplay of both governances can lead to a successful exchange relationship.

6.3 Limitations of the Study

The items used in this study were borrowed from previous studies. The two dimensions to measure structural governance, input-related agreement, and risk-related agreement had only three and two items respectively. Although these items exhibited satisfactory reliability, in future research, it is recommended to include additional items. The factor exchange of information only focuses on intangible aspects, and future research must focus more on the tangibles of the exchange of resources. For the measurement of all the variables, this study has taken the buyer's perspective, and future research must also consider the supplier's perspective. It should also be noted that the inter-organizational relationship, which is inclusive of various types of alliances, is a multi-dimensional construct. Some aspects, such as asset specificity, the resource-based view, and the knowledge-based view, were not covered by this research. Future research can include these aspects for a better understanding of the inter-organizational relationship between buyer and supplier. However, this study is a part of a larger study that included more than 100 indicators and it may have been exclusive while focusing on the measurement of structural and relational governance, as well as alliance performance.

The second limitation of this research is the sample population because the respondents were drawn from the list provided by FCAN (Federation of Contractors' Association of Nepal) and constitute only 270 construction companies, out of which 143 are class "A" construction companies, 40 are class "B" construction companies,

35 are class “C” construction companies, and 52 are class “D” as stated earlier. However, the list includes the number of construction companies from three major cities only: Kathmandu, Bhaktapur, and Patan. Despite all, these construction companies are the prominent players in the market frequently involved in infrastructure projects financed by the government of Nepal. Additionally, the size of the population is barely minimal, and the total sample was 176, where the target was to achieve at least 200. For future research, it is recommended to attempt to make the research inclusive of other industries as well and also to apply this concept to types of alliances such as public-private projects.

Additionally, inter-organizational relationships are longitudinal processes, and a survey can only deliver a cross-sectional snapshot. Further, the respondents were asked to pick only the important supplier that they have had an exchange relationship with, and their choice may not have reflected all of the facets since many organizations have more than one supplier. Moreover, the author assumed that the exchange relationship constitutes the inter-organizational relationship of roughly equal size of equal market decisiveness. Therefore, this study, although it attempted to deliver broad perspectives on the exchange relationship between construction companies and material suppliers, it did not cover all the aspects of the buyer-supplier exchange relationships such as asset specificity that involve specific transfers of knowledge.

6.4 Practical and Theoretical Implications

In terms of theoretical implications, this study has attempted to contribute to theoretical knowledge in organizational theory focusing on types of governance in the inter-organizational literature. The findings from this study suggest that both contractual and relational governance are equally significant in alliances. Although the hypotheses were tested on the sample data collected from the construction industry, the findings and the conceptual framework can be useful to other industries as well. The results and the literature discussed in the study can be constructive to aspiring individuals involved in projects that involve multiple organizations. This study has discussed almost all the aspects of inter-organizational literature which can be

beneficial to aspiring academics that wish to embark on the journey to discover inter-organizational relationships.

Apart from the theoretical implications, this study also has some practical implications. The various aspects of inter-organizational literature, especially the types of governance discussed in this study, can be beneficial to policymakers in Nepal. This study, through its findings, has shown what the antecedent conditions are for organizations to enter an alliance or a joint project with other organizations. The various aspects that cause the parties in the alliance to draft a contractual agreement are widely discussed in this study. From the Nepalese perspective, the practical implications of this study can also extend to public-private projects (PPP).

According to the Nepal Planning Commission, Nepal needs to invest around 10% of its GDP in infrastructure. Currently, Nepal invests around 5% of its total GDP, which implies that Nepal is short USD 13—18 billion to bridge the investment gap in infrastructure. The private sector, as in any country, plays a significant role in accelerating infrastructure development through finance, technology, and innovation, and infrastructure development is required for delivering quality, faster, and efficient public services. Engaging the private sector in infrastructure development allows the government to leverage government funds to focus on social sectors. As a result, PPPs in Nepal have emerged as a reliable alternative in emerging markets for infrastructure development. The practices of the PPP began in Nepal in 1990, and since then there has been considerable development in the legal framework for the PPP. From 1990 to 2000 the Hydropower Policy Act and BOT policy on the road sector were initiated, and from 2001 to 2010 five more acts related to PPP were initiated. From 2011 onwards another five acts were initiated to emphasize private and public participation in infrastructure development. With the various acts initiated, Nepal has witnessed considerable development in infrastructure, especially in hydropower projects. However, there have been several issues. The overall infrastructure development in all these years has only been focused on hydropower, whereas there has not been much progress in the development of fast-track highways connecting Kathmandu to other cities. The major issues that have impinged infrastructure development in Nepal through the PPP are political instability, lack of proper legal frameworks, and lack of institutional mechanisms. Other issues are financial and lack of social awareness of

the PPP. From the general issues related to the PPP, it can be seen that there is a serious lack of social awareness of the PPP among the public. Hence, this study, through its empirical findings, can provide insights regarding various aspects of the inter-organizational relationship with policy-makers as well as aspiring individuals involved in the PPP. As the PPP is a strategic alliance between public and private organizations to achieve a common objective, various issues come into play in such alliances. The first issue is the formation of a PPP, as two different organizations form a PPP to complete a project that one organization alone cannot. Another reason for forming a PPP is to reduce the transaction costs arising out of court settlements as well as the cost of preparing legal documents. The involvement of high asset specificity can also lead to the formation of a PPP, as such assets can only be used for specific purposes. The second issue is the governance structure. A PPP can either have an equity-based alliance or a non-equity-based alliance. Under the equity-based alliance, the equity from each shareholder is kept hostage to ensure that the parties in the alliance abstain from manifesting opportunistic behavior. The extent to which contractual agreements are drawn between the parties will also become a prime issue. As two parties entering a contract are unsure what will become of the project, they will likely rely on an extensive contractual agreement to protect their interest in their project. The involvement of a high level of asset specificity can also lead parties in the PPP to draft extensive contractual agreements. However, it has also been argued that as economic activity is embedded in the structure of social relations, a PPP can also be governed by relational trust. The third issue deals with the performance of the alliance, i.e., the antecedent conditions that determine alliance performance. The empirical findings from this study as well as from past studies have determined that the alliance is well governed both contractually and relationally and is more likely to perform better. Although external factors such as political and environmental instability also come into play, it is primarily internal governance that leads to alliance performance.

The various aspects of governance issues discussed in this study can be beneficial to policymakers in developing a policy that can benefit all of the parties involved in the PPP. Lastly, this study has broadly discussed three generic forms of governance: market, hybrid, and hierarchy. These three concepts serve as a cornerstone that underpins the basic understanding of the strategic alliance. An

aspiring individual can discover why the PPP or any strategic alliance is discrete from the market and hierarchy, and why different approaches are required to run or manage any alliance.

6.5 Recommendations for Further Study

The inter-organizational relationship is a broad dynamic study with multiple facets. As it falls under the hybrid form of governance, numerous variables can affect the overall alliance performance. For example, the role of asset specificity can determine the extent of structural governance, which can further substitute relational governance. Since this study has not taken asset specificity into account, it is recommended in future studies that asset specificity be included to test its efficacy regarding structural governance as well as the exchange of information. As a hybrid form is multidimensional, there are various other variables (not taken into account for this study) that could affect the overall exchange relationship, such as trust which can also affect coordination; and the extent of the formal agreement can affect autonomy. These variables in turn can steer the overall exchange relationship to a new level.

Apart from the above, the future should be inclusive of comparative study and discern all of the conditions and environmental factors to assess the exchange relationship between construction companies and material suppliers. Several intriguing questions remain. For example, various contingencies that could have moderated the efficacy of structural and relational governance regarding exchange performance were not included. Hence, some questions such as “Does the proposed causal relationship hold in different conditions and inter-organizational context?” and “Which other control variables may have an intervening impact on the role of structural and relational governance in exchange performance?” Hence, future research must consider the size of the organization, years of operation, the class category of the organization, and the nature of the exchange relationship as determining factors in measuring the effect of structural and relational governance on exchange performance.

Finally, this research has relied on a single method, i.e., the quantitative method, to test all six hypotheses. In the future, the use of qualitative methods, which include

in-depth interviews, is recommended. Doing so would give more insight into the exchange relationship between construction companies and material suppliers. In-depth interviews would also unravel other aspects of the exchange relationship that have gone unnoticed hitherto; and the final recommendation is that this conceptual model should also be used in other types of alliances, such as public-private projects.

(Abdi & Aulakh, 2017; Akerlof, 1978; B Loasby, 1996; Baker, Gibbons, & Murphy, 2002; Bentler, 1990; Bollen, 1989; Bollen & research, 1989; Bonatto, de Resende, & Pontes, 2020; Briggs & Cheek, 1986; Browne, 1993; Byrne, 2013; Cabigiosu & Camuffo, 2012; Chen, Paulraj, & Lado, 2004; Chung, Singh, & Lee, 2000; Cui & O'Connor, 2012; Das & Teng, 2000; De Leeuw, 2005; Dekker, 2004; DeVellis & Thorpe, 2021; Dillman, 2011; Dillman et al., 2008; Duan, 2012; Elg, 2000; Faems et al., 2008; Ferguson, Paulin, & Bergeron, 2005; Fontana & Frey, 2003; Garbade, Omta, & Fortuin, 2016; Gatignon & Xuereb, 1997; George & Mallery, 2010; Goes & Park, 1997; Grandori & Furlotti, 2010; Granovetter, 1985; Greve et al., 2010; Gulati, 1995a, 1995b, 1998, 1999, 2007; Gulati, Dialdin, & Wang, 2002; Gulati & Gargiulo, 1999; Gulati & Nickerson, 2008; Gulati & Sytch, 2007; Gulati & Westphal, 1999; Hair Jr Joseph et al., 2009; Hillman, Withers, & Collins, 2009; Hoang & Rothaermel, 2005; Hoetker, 2005; Hoetker & Mellewigt, 2009; Howard & Squire, 2007; Hu & Bentler, 1999; Huang et al., 2016; Ingram & Baum, 1997; Jacobs, Vickery, & Droge, 2007; James, Mulaik, & Brett, 1983; Jöreskog & Sörbom, 1993; Joshi & Lahiri, 2015; Kerlinger, Lee, & Bhanthumnavin, 2000; Klein, 1980; Kogut, 1988; Krishnan, Martin, & Noorderhaven, 2006; Lakpetch & Lorsuwannarat, 2012; Larson, 1992; Lazzarini, Claro, & Mesquita, 2008; Lee & Cavusgil, 2006; Lindeman, Merenda, & Gold, 1980; Lioukas & Reuer, 2020; Liu & Ravichandran, 2015; Lyons & Mehta, 1997; MacCallum, Browne, & Sugawara, 1996; Madhok, 1995; Manolova, Manev, & Gyoshev, 2014; McKeever, Anderson, & Jack, 2014; Mellewigt, Madhok, & Weibel, 2007; Meyers, Gamst, & G, 2013; Mitchell, Dussauge, & Garrette, 2002; Mitsuhashi & Greve, 2009; Moorman, Zaltman, & Deshpande, 1992; Murray, Kotabe, & Zhou, 2005; Nooteboom, 1996; Novak & Stern, 2008; Nunnally, 1978; Oliver, 1985; Owen-Smith & Powell, 2004; Oxley, 1997; Pallant, 2020; Paulraj, Lado, & Chen, 2008; Pearce, Freeman, & Robinson Jr, 1987; Pfeffer & Salancik, 2003; Poppo & Zenger, 2002; Powell, 2012; Powell & DiMaggio, 2012; Provan & Gassenheimer,

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6.6 Chapter Summary

This chapter summarizes the findings from the hypothesis testing of the conceptual model for measuring the effectiveness of both structural and relational governance on the exchange relationship. It was seen that the major determinants of a successful exchange relationship consisted of input-related and risk-related agreements (a governing mechanism of structural governance), frequency of communication and relational trust (a governing mechanism of relational governance), and the exchange of information. The relationships among variables were combined to form a successful exchange relationship between construction companies and material suppliers. The confirmed hypothesis 3, contractual agreements, was necessary to provide a domain where the mechanisms of relational governance can thrive. It was also found that repeated interaction is required to build trust between the parties in an exchange relationship, and hypothesis 4a supported this argument. Further, hypothesis 5 supported the argument that the combination of both structural and relational governance mechanisms can lead to efficient exchange relationships. Lastly, it was also supported that the efficient exchange of information can lead to a successful exchange relationship, and hypothesis 6 supported this argument. In the section of this chapter, a discussion of the findings concerning the hybrid form of governance was carried out. This chapter also delivers the theoretical contribution and applied implication of the findings. Furthermore, together with recommendations for future

study, the limitations concerning its research design, the validity of the findings, and the issues related to measurement were thoroughly discussed.

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APPENDICES

QUESTIONNAIRE

A study of exchange relationship between construction companies (buyer)-material supplier (supplier)

Introduction: This questionnaire is part of research undertaken in a doctoral degree study in the doctoral program in public administration at National Institute of Development Administration (NIDA)

The purpose of this study is to examine the role of formal agreement and relational trust, and communication that enhance the competitiveness in contractor-material supplier exchange relationship in terms of exchange of vital resources. This research project gives significant contribution to not only the construction industry but also to other private sectors such as small and medium enterprises (SME) and corporate houses both public and private.

Definition: Buyer-supplier exchange relationship refers to the long-term relational exchange with your supplier. You enter such kind of relationship to ensure uninterrupted supply of useful resources that are necessary for survival of your organization. Such relationships with suppliers will also help your organization with other advantages such as access to information relating to market, product, and other opportunities. As you continue to have long-term relationships with your supplier, you are more likely to develop trust. This in turn gives you more confidence towards your supplier, and you are more likely to start another venture with the same supplier.

Instruction:

1. In total, there are 8 pages (including this page). Please answer every question. Please be assured that your response is strictly confidential and only aggregate reports are reported.
2. Select the exchange relationship with any supplier, which you have experienced since the last (3) years as a priority. Please complete this even if your organization is no longer in an exchange relationship with your supplier or it is terminated.

Thank you for your time and effort that are contributed to this study.

Ashish Dewan
Ph.D. candidate in Governance and Development at NIDA and Project Coordinator,
Phone 9841387454, 01-4572534

Section A: About Yourself, and Your Organization

Instruction: Please select one supplier that your organization has an exchange relationship from 2019 until at present to be used as the focal basis of information. Please mark (x) at your response in the following questions that indicate most precisely your perception, estimation, or facts for each question.

1. Does your specific job in your organization focus on maintaining long-term relational exchange with a particular vendor, or material supplier, or manufacturer to procure products, equipment, raw materials, and information that is most required for the survival of your organization?

    □ No (Please forward this survey to the person you see fit, thank you)

    □ Yes

2. Which category best describes your position in the organization?

    □ President, owner, chief executive, managing director, deputy managing director, general manager

    □ Chief operation, director in operations, vice president in operations, operation manager, operation department head, purchase manager, sales head

    □ Others, please specify…….

3. According to the construction classification regulation act 1975 AD, and according to construction business rules 2056 B.S (2000 AD) construction companies are classified in terms of their financial capacity, work experience, human resources, and machine and equipment. Which of the following contractor classes, as enumerated below, your organization falls under?

    □ Class “A”

□ Class “B”

□ Class “C”

□ Class “D”

4. Please indicate how many years your organization has been in operation.

□ Less than one year

□ 1 to 4 years

□ 5 to 10 years

□ More than 10 years

5. How many employees does your organization currently employ?

□ Less than 100

□ 100 - 499

□ 500 - 1999

□ 2000 - 4999

□ 5000 – 9,999

□ More than 10000

6. To what extent does your organization feel that they rely upon the supplier/manufacturer for each of the following items.

	Strongly disagree			Some what			Strongly agree
1. In terms of product delivery	1	2	3	4	5	6	7
2. In terms of product supply	1	2	3	4	5	6	7
3. In terms of product information	1	2	3	4	5	6	7
4. In terms of price information	1	2	3	4	5	6	7
5. In terms of field staff assistance	1	2	3	4	5	6	7
6. In terms of financial assistance	1	2	3	4	5	6	7
7. In terms of loan counseling	1	2	3	4	5	6	7

8. In terms of equipment supply	1	2	3	4	5	6	7

7. To what extent were the agreements about the following items made with your most important supplier at the beginning of the exchange relationship.

	Strongly disagree			Some what			Strongly agree
1. About delivery and after sales services	1	2	3	4	5	6	7
2. About pricing and commission	1	2	3	4	5	6	7
3. About confidentiality	1	2	3	4	5	6	7
4. About procedures of resolution of conflict	1	2	3	4	5	6	7
5. About early termination of the exchange relationship	1	2	3	4	5	6	7

8. How often do you have telephone contact, email contact, and face-to-face contact with your most important supplier? Please answer every item.

1 = once per year or less, 2 = once every 6 months, 3 = once per quarter, 4 = monthly,
5 = once every two weeks, 6 = weekly, 7 = more than once per week

1. Telephone	1	2	3	4	5	6	7
2. Email	1	2	3	4	5	6	7
3. Face-to-face	1	2	3	4	5	6	7

9. To what extent do you agree or disagree with the following statements:

	Strongly disagree			Some what			Strongly agree
1. The most important supplier always did what he promised.	1	2	3	4	5	6	7
2. Our organization believes that the most important supplier will not make excessive request of us.	1	2	3	4	5	6	7
3. Our organization believes that the most important supplier is being sincere.	1	2	3	4	5	6	7
4. Our organization has confidence that the most important supplier's future decision and actions will not adversely affect us.	1	2	3	4	5	6	7
5. When making important decisions, the most important supplier cares about our welfare or interest.	1	2	3	4	5	6	7
6. When it comes to things that are important to us, we can depend on our most important supplier support.	1	2	3	4	5	6	7

10. To what extent do you agree or disagree with the following statements:

	Strongly disagree			Some what			Strongly agree
1. It is very easy to speak with everyone at the supplier's organization whenever we feel necessary, regardless of rank or position.	1	2	3	4	5	6	7
2. The risk of leaking out confidential information…(1 = very large to 7 = very small)	1	2	3	4	5	6	7

11. To what extent do you agree or disagree with the following statements:

	Strongly disagree			Some what			Strongly agree
1. You frequently exchange with your most important supplier, detailed information concerning current and new construction projects.	1	2	3	4	5	6	7
2. You frequently exchange with your most important supplier, detailed information concerning inventory level.	1	2	3	4	5	6	7
3. You frequently exchange with your most important supplier, detailed information concerning project plans/demand forecasts.	1	2	3	4	5	6	7
4. You frequently exchange with your most important supplier, detailed information about the attributes and performance parameters relating to your projects.	1	2	3	4	5	6	7
5. You frequently exchange with your most important supplier, detailed information about the cost breakdown structure relating to your projects.	1	2	3	4	5	6	7
6. You frequently exchange with your most important supplier, detailed information about delivery schedules and other supply services relating to your construction/project sites.	1	2	3	4	5	6	7
7. You frequently exchange with your most important supplier, detailed information about your project capacity, and its level of saturation.	1	2	3	4	5	6	7

8. You frequently exchange with your most important supplier, detailed information about changes in volume, mix, and sequencing relating to your construction/project sites.	1	2	3	4	5	6	7
9. You frequently exchange with your most important supplier, detailed information about key financials such as turnover, cash flows, and profitability ratios.	1	2	3	4	5	6	7

12. To what extent do you agree or disagree with the following statements.

	Strongly disagree			Some what			Strongly agree
1. The products and other materials supplied/produced by your most important supplier with regards to quality and durability are better than other suppliers in the market.	1	2	3	4	5	6	7
2. To manufacture the materials/products your most important supplier uses process technology that is more advanced than other suppliers in the market.	1	2	3	4	5	6	7
3. You are very satisfied with the quality of the supply services of your most important supplier (on time delivery etc.)	1	2	3	4	5	6	7
4. You are very satisfied with the price of the products/materials purchased from your most important supplier because it is lower than the price offered by other suppliers in the market.	1	2	3	4	5	6	7
5. The most important supplier is very flexible concerning the	1	2	3	4	5	6	7

customization or modification of the product/materials.							
6. The most important supplier is very flexible concerning the batch size.	1	2	3	4	5	6	7
7. You are very satisfied with your most important supplier's order to delivery lead time.	1	2	3	4	5	6	7

13. To what extent do you agree or disagree with the following statements.

	Strongly disagree			Some what			Strongly agree
1. Your organization is loyal to the supplier.	1	2	3	4	5	6	7
2. Your organization has frequent face-to-face planning/communication with your supplier	1	2	3	4	5	6	7
3. There is a high-level corporate level communication on important issues with the supplier	1	2	3	4	5	6	7

14. In your opinion, which ways that the exchange relationship between contactor (buyer)-material supplier can be enhanced? And how can the relationship between contractors and material suppliers be sustained long-term?

Thank you for completing the survey. The result of this survey will be depicted in a summary report. If you would like a copy of this report, please provide us with the following information:

Name	
Address	

Once you complete the survey please hand it over to the person who you received this questionnaire from. You can also contact Mr. Ashish Dewan.

Mobile No: 9841387454, Landline: 01-4572534

प्रश्नवाली

निर्माण व्यवसाय (केता/खरिदकर्ता)-सामाग्री आपूर्तिकर्ता) बीचको विनिमय सम्बन्धको बारेमा अध्ययन

परिचय

यो प्रश्नावली नेसनल इन्स्टिट्युट अफ डिभिलप्मेन्ट एड्मिनिसट्रेशनबाट डक्टोरल प्रोग्राम इन् पब्लिक एड्मिनिस्ट्रेसनमा डक्टोरल डिग्रीका लागि गरिएको अध्ययन–अनुसन्धानको एक भाग हो ।

यो अध्ययनको मूल उद्देस्य भनेको निर्माण व्यवसाय (खरिदकर्ता) र सामाग्री आपूर्तिकर्ता बीचको विनिमयको सम्बन्धमा प्रतिस्पर्धा बढाउनेमा औपचारिक सम्झौता र सम्बन्धगत भरोसा अनि सञ्चारको भूमिका जस्ता महत्वपूर्ण स्रोतहरूका आधारमा (शर्त)मा जाँच गर्नु हो । यो अध्ययन–अनुसन्धानले निर्माण उद्योग मात्र नभएर अरु ससाना तथा मध्यम उद्यमहरूको साथसाथै सार्वजनिक र निजी ठूला कर्पोरेट हाउसहरूलाई पनि महत्वपूर्ण योगदान दिनेछ ।

परिभाषाः

खरिदकर्ता र आपूर्तिकर्ता (Construction companies–material supplier) बीच विनिमय सम्बन्ध भन्नाले आफ्नो आपूर्तीकर्तासँग कुनै पनि लामो विनिमय सम्बन्ध बुझिन्छ ।

आफ्नो संस्थाको हित र अस्तित्वको लागि चाहिने सामाग्री, वस्तु, साधनहरूको निर्वाध आपूर्तिको लागि तपाईं आफ्नो आपूर्तिकर्तासँग यस्तो खालको सम्बन्ध राख्न चाहनु हुन्छ । आपूर्तिकर्तासँग राम्रो सम्बन्ध राख्नाले आफ्नो संस्थालाई बजार, उत्पादन, र अरू अवसरका सम्बन्धमा राम्रो जानकारीको साथसाथै अरू धेरै कुराहरूको सहायता पुग्नसक्दछ । जब तपाईं आफ्नो आपूर्तिकर्तासँग सम्बन्ध जारी राख्नुहुन्छ तब आफ्नो आपूर्तिकर्ताप्रति भरोसा बढ्दैजान्छ । यही भरोसाले गर्दा तपाईं आफ्नो आपूर्तिकर्ताप्रति विश्वस्त हुनु सक्नुहुन्छ र पछि गएर आफ्नो आपूर्तिकर्तासँग पनि कुनै नयाँ प्रोजेक्ट शुरु गर्नसक्नु हुन्छ ।

निर्देशनः

१. यस अनुसन्धान पत्रमा कुल मिलाएर दस पृष्ठहरू छन् । कृपया सबै प्रश्नहरूको उत्तर दिनुहोस् । ढुक्क हुनुहोस् कि तपाईको सबै प्रतिकृयाहरू अति गोप्य राखिने छन् र रिपोर्टहरूको कुलयोग मात्र रिपोर्ट गरिने छ ।

२. विगत तीन वर्षदेखि तपाईंले अनुभव गर्दै आउनु भएको अर्थात् कुनैपनि आपूर्तिकर्तासँग राख्दै आउनु भएको विनिमय सम्बन्धलाई महत्व दिँदै चयन गर्नुहोस् । कृपया, तपाईंको संस्था तपाईंको महत्वपूर्ण आपूर्तिकर्तासँग हालका दिनमा विनिमय सम्बन्ध नभएता पनि अथवा सम्बन्ध समाप्त भएको छ भने पनि यो सर्वेक्षण पुरा गरिदिनुहोला ।

यो अध्ययनमा तपाईंबाट भएको मिहिनेत, योगदान र दिएको समयका लागि म आभारी छु ।

आशिष देवान
पीएच.डी क्यान्डिडेट इन् गभर्नेन्स एण्ड डेभलप्मेन्ट एट निडा (NIDA) एण्ड प्रोजेक्ट म्यानेजर
फोनः ९८४१३८७४५४, ०१-४५७२५३४

खण्ड कः तपाईं आफै र तपाईंको संस्थाको बारेमा

निर्देशनः कृपया सूचनाको फोकल आधार मानेर कुनैपनि महत्वपूर्ण एक आपूर्तिकतालाई चयन गर्नुहोस्, जोसँग यहाँको संस्था २०१९ देखि आजसम्म विनिमय सम्बन्ध रहँदै आएको छ । कृपया तल दिइएको प्रश्नहरूमा आफ्नो प्रतिकृया दिन (x) चिह्न(मार्क) दिनुहोस्, जसले हरेक प्रश्नको लागि तपाईंको धारणा, अनुमान अथवा वास्तविक्ताको ठ्याक्कै संकेत गर्दछ ।

१. के तपाईको संस्थामा तपाईको कार्य आफ्नो संस्थाको हित अथवा अस्तित्वको लागि उत्पादनहरू, उपकरण, तथा जानकारीको लागि विशेष विकेता, सामाग्री आपूर्तिकर्ता अथवा उत्पादकसँग लामो अवधिको सम्बन्धगत आदानप्रदान(विनिमय) कायम गर्नको लागि ध्यान केन्द्रित(फोकस) गर्छ ?

- ☐ गर्दैन (कृपया राम्रो जानकारी भएको व्यक्तिलाई यो सर्वेक्षण पास गरिदिनुहोला) ।
- ☐ गर्छ ।

२. तल दिएका कुन श्रेणीले तपाईंको संस्थामा तपाईंको पदलाई बुझाउँछ ?

- ☐ अध्यक्ष, मालिक, प्रमुख कार्यकारी अधिकृत, प्रबन्ध निर्देशक, उपप्रबन्ध निर्देशक, महाप्रबन्धक
- ☐ प्रमुख परिचालन अधिकारी, संचालन उपनिर्देशक, संचालन प्रबन्धक, संचालन विभाग प्रमुख, खरिद प्रबन्धक, बिक्री प्रमुख(sales head)
- ☐ अरू केही भए, कृपया निर्दिष्ट गर्नुहोस् .....

३. निर्माण वर्गीकरण नियम, ऐन १९७५ ई. र कन्स्ट्रक्शन बिज्नेस रुल्स (constructions buisiness rules)वि.स.२०५६ (२००० ई.) अनुसार निर्माण कम्पनीहरू तिनका वित्तीय क्षमता, कार्य अनुभव, मानव संसाधन, मेसिन र उपकरणको आधारमा वर्गीकृत गरिएको छ । तल दिइएका कुन वर्गअन्तर्गत तपाईको संस्था पर्छ ?

- ☐ 'क' वर्ग

☐ 'ख वर्ग

☐ 'ग' वर्ग

☐ 'घ' वर्ग

४. तपाईको संस्था संचालनमा आएको कति वर्ष भयो ? कृपया संकेत गर्नुहोस् :

☐ एक वर्षभन्दा कम

☐ एकदेखि चार वर्ष

☐ पाँचदेखि दश वर्ष

☐ दश वर्षभन्दा बढी

५. तपाईको संस्थामा हाल कतिजना कर्मचारीहरू कार्यरत छन् ?

☐ १०० भन्दा कम

☐ १०० देखि ४९९

☐ ५०० देखि १९९९

☐ २००० देखि ४९९९

☐ ५००० देखि ९९९९

☐ १०००० भन्दा बढी

६. कुन हदसम्म तपाईंलाई लाग्छ कि तल दिइएका वस्तुहरूको लागि तपाईंको संस्था आपूर्तिकर्ता/उत्पादकमाथि निर्भर छ ?

	पूर्णत: असहमत	आंशिक असहमत	पूर्णत: सहमत

१.उत्पादन डेलिबरीको लागि	१	२	३	४	५	६	७
२.उत्पादन आपूर्तिको लागि	१	२	३	४	५	६	७
३.उत्पादन जानकारीको लागि	१	२	३	४	५	६	७
४.मूल्य जानकारीको लागि	१	२	३	४	५	६	७
५.साइट/निर्माणक्षेत्रका कर्मचारीको सहयोगको लागि	१	२	३	४	५	६	७
६.वित्तीय सहयोगको लागि	१	२	३	४	५	६	७
७.कर्जा परामर्शको लागि	१	२	३	४	५	६	७
८.निर्माण सामाग्री (उपकरण) आपूर्तिको लागि	१	२	३	४	५	६	७

७. कुन हदसम्म तल दिइएका वस्तुहरूसम्बन्धी तपाईको महत्वपूर्ण आपूर्तिकर्तासँग विनिमय सम्बन्ध राख्नअघि सम्झौता गरिएको थियो ?

	पूर्णत: असहमत			आंशिक असहमत			पूर्णत: सहमत
१. डिलिभरी र बिक्रीपछिको सेवा बारेमा	१	२	३	४	५	६	७
२.मूल्यनिर्धारण र कमिसन(दलाली) बारेमा	१	२	३	४	५	६	७
३.व्यापारसम्बन्धी गोप्यताबारेमा	१	२	३	४	५	६	७
४.एकापसबीच द्वन्द अथवा मनमुटाव समाधानको प्रक्रीया बारेमा ।	१	२	३	४	५	६	७
५.विनिमय सम्बन्धको अपरिपक्व समाप्तिका बारेमा	१	२	३	४	५	६	७

८. कति पटक तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग टेलिफोन, ईमेल अथवा आमनेसामने सम्पर्क राख्नुहुन्छ ? कृपया, प्रत्येक प्रश्नको उत्तर दिनुहोस् ।

१ = वर्षमा १ पटक वा कम

२ = हरेक ६ महिनामा १ पटक,

३ = हरेक ३ महिनामा १ पटक,

४ = हरेक महिनामा १ पटक,

५ = प्रत्येक २ हप्तामा १ पटक,

६ = साप्ताहिक(हप्ताका १ पटक),

७ = हप्तामा १ पटक भन्दाबढी

१. टेलिफोन	१	२	३	४	५	६	७
२. ईमेल	१	२	३	४	५	६	७
३. आमनेसामने	१	२	३	४	५	६	७

९. कुन हदसम्म तल दिइएका कथनहरूसँग तपाईं सहमत वा असहमत हुनुहुन्छ ?

	पूर्णत: असहमत			आंशिक असहमत			पूर्णत: सहमत
१.मुख्य/महत्वपूर्ण आपूर्तिकर्ता जसले आफूले गरेको प्रतिवद्धताअनुसारे कर्तव्यको पालन गर्छ ।	१	२	३	४	५	६	७
२.हाम्रो संस्थालाई विश्वास छ कि आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्ताले चाहिने भन्दाबढी अनुरोध गर्दैन ।	१	२	३	४	५	६	७
३.हाम्रो संस्थालाई विश्वास छ कि हाम्रो मुख्य/महत्वपूर्ण आपूर्तिकर्ता हामीप्रति इमान्दार छ ।	१	२	३	४	५	६	७
४.हाम्रो संस्था विश्वस्त छ कि हाम्रो महत्वपूर्ण आपूर्तिकर्ताले भविष्यमा लिने कुनै	१	२	३	४	५	६	७

पनि निर्णय अथवा कार्यहरूले हामीप्रति प्रतिकूल असर गर्ने छैन ।							
५.कुनै पनि महत्वपूर्ण निर्णय लिँदा हाम्रो महत्वपूर्ण आपूर्तिकर्ताले हाम्रो संस्थाको कल्याण र स्वार्थको ध्यान राख्नेछ ।	१	२	३	४	५	६	७
६.हामीलाई आवश्यक्ता र जरुरी पर्ने वस्तुहरूका सम्बन्धमा हामी आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्ताको साथ र समर्थन रहनेमा हामी विश्वस्त छौँ ।	१	२	३	४	५	६	७

१०. कुन हदसम्म तल दिइएका कथनहरूका बारेमा तपाईं सहमत वा असहमत हुनुहुन्छ ?

	पूर्णत: असहमत			आंशिक असहमत			पूर्णत: सहमत
१.हामीलाई चाहिएका बखत हाम्रो मुख्य/महत्वपूर्ण आपूर्तिकर्ता संस्थाको कुनैपनि व्यक्तिसँग उनको पद वा प्रतिष्ठाको ख्याल नगरीकन नै कुराकानी गर्न वा सम्पर्क राख्न सजिलो छ ।	१	२	३	४	५	६	७
२.आपूर्तिकर्ताको तर्फबाट कुनै पनि गोपनीय सूचना(जानकारी) को चुहावट हुने सम्भावना....(१ = धेरै मात्रामा, ७ = थोरै मात्रामा)	१	२	३	४	५	६	७

११. कुन हदसम्म तल दिइएका कथनहरूसँग तपाईं सहमत वा असहमत हुनुहुन्छ

	पूर्णत: असहमत			आंशिक असहमत			पूर्णत: सहमत
१.तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग कुनैपनि चालु र नयाँ निर्माण परियोजनाका बारेमा विस्तृत जानकारी नियमितरूपमा आदानप्रदान गर्नुहुन्छ ।	१	२	३	४	५	६	७

२.तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग आफ्ना सामानको सूची(inventory level) सम्बन्धमा विस्तृत जानकारी बारम्बार आदानप्रदान गर्नुहुन्छ ।	१	२	३	४	५	६	७
३.तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग आफ्नो परियोजनाको योजनाहरू सम्बन्धमा विस्तृत जानकारी बारम्बार आदानप्रदान गर्नुहुन्छ ।	१	२	३	४	५	६	७
४.तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग आफ्नो परियोजनाको/माग पूर्वानुमान, विशेषता र निष्पादन मापदण्ड(प्यारामिटर)हरूको बारेमा विस्तृत जानकारी बारम्बार आदानप्रदान गर्नुहुन्छ ।	१	२	३	४	५	६	७
५.तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग आफ्नो परियोजनाको लागत खर्चको विवरण/मसलन्द(cost breakdown)सम्बन्धी विस्तृत जानकारीका लागि बारम्बार आदानप्रदान गर्नुहुन्छ ।	१	२	३	४	५	६	७
६.तपाई आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग निर्माण/परियोजनास्थलहरूको लागि विस्तृत डेलिभरी तालिका र अन्य आपूर्ति सेवाहरूका बारेमा विस्तृत जानकारी नियमितरूपमा आदानप्रदान गर्नुहुन्छ ।	१	२	३	४	५	६	७
७.तपाई आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग आफ्नो परियोजनाको क्षमता साथसाथै संतृप्ति(saturation) स्तरको विस्तृत जानकारी नियमितरूपले आदानप्रदान गर्नुहुन्छ ।	१	२	३	४	५	६	७
८.तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग निर्माण/परियोजनास्थलको	१	२	३	४	५	६	७

परिमाणमा परिवर्तन (changes in volumes), मिश्रण (mix) तथा अनुक्रम(sequencing)का बारेमा विस्तृत जानकारी नियमितरूपमा आदानप्रदान गर्नुहुन्छ ।							
९.तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्तासँग संस्थाको वित्तीय अवस्था, जस्तै टर्नओभर(turnover), नगदप्रवाह(cash flow) र लाभप्रदताको अनुपात(profitability ratio) सम्बन्धी विस्तृत जानकारी नियमितरूपमा आदानप्रदान गर्नु हुन्छ ।	१	२	३	४	५	६	७

१२. कुन हदसम्म तल दिइएका कथनहरूसँग तपाईं सहमत वा असहमत हुनुहुन्छ

	पूर्णत: असहमत			आंशिक असहमत			पूर्णत: सहमत
१.तपाईंको मुख्य/महत्वपूर्ण आपूर्तिकर्ताबाट आपूर्ति भएका निर्माण सामाग्री तथा अन्य वस्तुहरू अरू आपूर्तिकर्ताका भन्दा टिकाउ र गुणस्तरीय छ ।	१	२	३	४	५	६	७
२.तपाईंको मुख्य/महत्वपूर्ण आपूर्तिकर्ताले उत्पदान(product) र सामाग्री(material)उत्पादन गर्नाका लागि प्रयोग गरेको प्रविधि अन्य आपूर्तिकर्ताको हेरीकन अग्रगामी(advance) छ ।	१	२	३	४	५	६	७
३.तपाई आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्ताले दिएको आपूर्तिसेवाहरूको गुणस्तरदेखि सन्तुष्ट हुनुहुन्छ (on time delivery etc) ।	१	२	३	४	५	६	७
४.तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकर्ताबाट खरिद गरिएका समानहरूको मूल्यदेखि सन्तुष्ट हुनुहुन्छ किनभने सो प्रस्ताव गरिएको मूल्य अरू	१	२	३	४	५	६	७

आपूर्तिकर्ताले प्रस्ताव गरेकाभन्दा तुलनात्मकरूपमा सस्तो छ ।							
५.उत्पादन तथा सामाग्री (products/materials) अनुकूलन अथवा परिवर्तन सम्बन्धित तपाईंको मुख्य/महत्वपूर्ण आपूर्तिकर्ता लचिलो छ ।	१	२	३	४	५	६	७
६.ब्याचको साइज(batch size) सम्बन्धमा तपाईंको मुख्य/महत्वपूर्ण आपूर्तिकर्ता लचिलो छ ।	१	२	३	४	५	६	७
७.तपाईं आफ्नो मुख्य/महत्वपूर्ण आपूर्तिकताको समयमै सामाग्री आपूर्ति गरिदिने कार्य (order to delivery lead time) देखि सन्तुष्ट हुनुहुन्छ ।	१	२	३	४	५	६	७

१३. कुन हदसम्म तल दिइएका कथनहरूसँग तपाईं सहमत वा असहमत हुनुहुन्छ

	पूर्णत: सहमत			आंशिक असहमत			पूर्णत: सहमत
१.तपाईंको संस्था तपाईंको मुख्य/महत्वपूर्ण आपूर्तिकता प्रति निष्ठावान् छ ।	१	२	३	४	५	६	७
२.तपाईंको संस्था र तपाईंको मुख्य/महत्वपूर्ण आपूर्तिकर्ता बीच नियमितरूपमा योजना बनाउन सम्बन्धी प्रायजसो आमनेसामने सम्पर्क भइरहन्छ ।	१	२	३	४	५	६	७
३.कुनै पनि महत्वपूर्ण मुद्दाहरु लिएर तपाईंको संस्था र तपाईंको मुख्य/महत्वपूर्ण आपूर्तिकर्ता बीच उच्च स्तर/ कर्पोरेट स्तरको सम्पर्क हुनेगर्छ ।	१	२	३	४	५	६	७

१३. तपाईंको विचारमा अरू कुन उपाय र कारणहरूले निर्माण व्यवसाय (खरिदकर्ता)-सामाग्री आपूर्तिकर्ता बीचको विनिमय सम्बन्ध बढाउन सकिन्छ। कसरी चाहीँ निर्माण व्यवसाय (खरिदकर्ता)-सामाग्री आपूर्तिकर्ताको सम्बन्ध लामो अवधिसम्म कायम राख्न सकिन्छ।

यो सर्वेक्षण पुरा गर्न सहयोग गर्नु भएकामा तपाईंलाई धन्यवाद छ। यो सर्वेक्षणको परिणाम संक्षिप्त रिर्पोटमा चित्रित अथवा वर्णन गरिने छ। यो रिपोर्टको कपि चाहिएमा तपाईंको नाम र ठेगाना(ईमेल ,फाृन नम्बर ईत्यादि तल उपलब्ध गराई दिनुहोला।

नम	
ठेगाना	

यो सर्वेक्षण पुरा भएपछि, कृपया, जुन व्यक्तिले तपाइँलाई यो सर्वेक्षण गर्न भन्नु भएको थियो, उनै व्यक्तिलाई बुझाई दिनुहोला अथवा आशिष देवानसँग सम्पर्क राख्नुहोला।

मोवाईल नं: ९८४१३८७४५४
फोन न. ०१-४५७२५३४

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