

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,  
KUMASI, GHANA**

**The Impact of Local Partner Control Mechanisms on Performance Measures in  
International Construction Joint Ventures (ICJVs) in Ghana**

By

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A Thesis submitted to the Department of Building Technology,  
College of Art and Built Environment

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**MASTER OF PHILOSOPHY**

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## DECLARATION

I hereby declare that this submission is my own work towards the MPhil Construction Management and that, to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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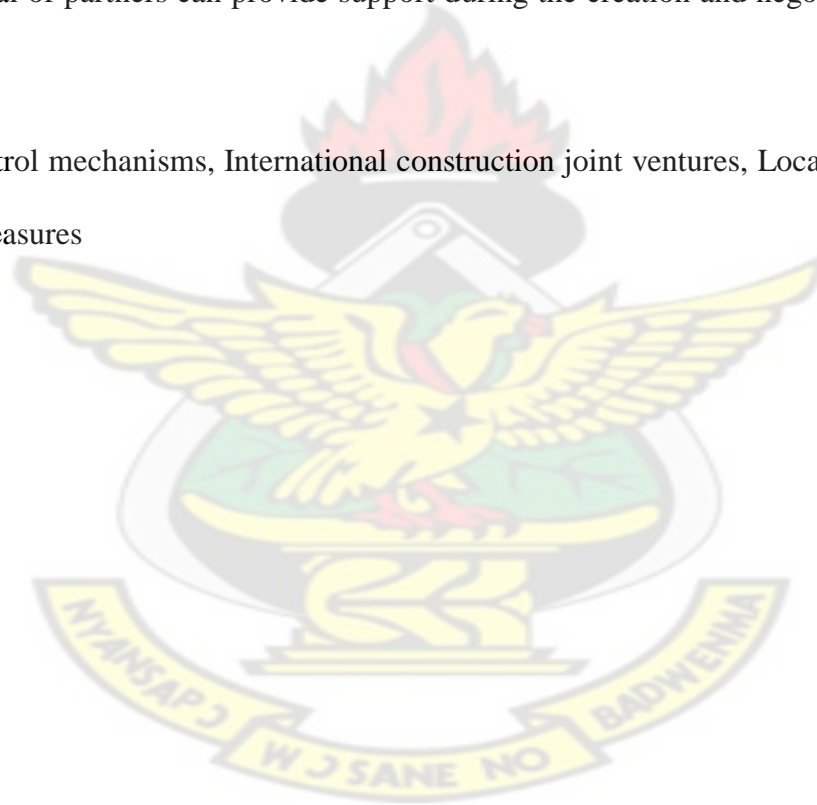
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## **ABSTRACT**

The collaborative relationship between foreign-local firms in the form of international construction joint ventures (ICJVs) has been widely adopted in the construction industry over the past decades as a strategic means of providing new large-scale, technically complex building and infrastructure projects. Notwithstanding, industrial practices have also recorded ICJVs as a problematic organizational form in terms of performance. From the international business literature and industrial advocate, the control exercised by partners act as a significant determinant factor of performance. This research study aims to investigate the effect of local partner control mechanisms on performance measures in international construction joint ventures (ICJVs) in Ghana. The study sort to identify the control mechanisms employed by the local partner, and criteria for assessing performance in ICJVs. Purely quantitative research method was adopted in this study. Using questionnaire survey by purposive sampling technique, a total of 83 completed questionnaires formed the basis of the analysis. Local professionals (senior executives e.g. project managers, architects, engineers, quantity surveyors, etc.) in construction joint ventures with foreign construction firms in Ghana were identified as valid respondents for this study. Using descriptive statistics and PLS-SEM analysis, with objective one, four grouped factors of control mechanisms containing 14 observed variables were obtained using confirmatory factor analysis. The means and normalized values were derived after the confirmatory analysis. Training and learning opportunities appeared first, followed by key functional and operational areas, top management staffing and support in policy and planning process. With the objective two, some key performance indicators were obtained from literature and ranked to determine their significance level. A structural equation model was generated for assessing the relationships between control mechanisms with four distinct performance measures. Among the ten (10) hypotheses that was proposed, eight (8) were supported. Generally, personnel control mechanisms represent a vehicle

to influence performance at the project, company and centralized level. However, there was a strong correlation to partner performance through the deployment of local partners in key functional and operational areas. Further, policy control mechanisms highly correlate with performance at the project and centralized level. The present study has enriched the existing knowledge base of ICJVs in providing an in-depth understanding that through the adoption of multiple performance measurements, there is a greater understanding of the implications of control of different aspects of an ICJV. Further, employing control mechanisms that improves the performance goal of partners can provide support during the creation and negotiation process in ICJVs.

**Keywords:** Control mechanisms, International construction joint ventures, Local partner, Ghana, Performance measures



## TABLE OF CONTENT

<b>DECLARATION.....</b>	<b>i</b>
<b>ABSTRACT.....</b>	<b>ii</b>
<b>TABLE OF CONTENT.....</b>	<b>iv</b>
<b>LIST OF TABLES .....</b>	<b>ix</b>
<b>LIST OF FIGURES .....</b>	<b>xi</b>
<b>ACKNOWLEDGEMENT.....</b>	<b>xii</b>
<b>DEDICATION.....</b>	<b>xiii</b>
<b>CHAPTER ONE .....</b>	<b>1</b>
<b>INTRODUCTION.....</b>	<b>1</b>
1.1 Background of the Research .....	1
1.2 Research Problem .....	5
1.3 Research Aim and Objectives .....	7
1.3.1 Aim .....	7
1.3.2 Objectives .....	7
1.4 Scope of the Study .....	7
1.5 Research Process/Approach.....	8
1.6 Significance and Value of the Research .....	10
1.7 Thesis Structure .....	11
<b>CHAPTER TWO .....</b>	<b>13</b>
<b>LITERATURE REVIEW .....</b>	<b>13</b>
2.1 INTRODUCTION .....	13
2.2 BACKGROUND OF INTERNATIONAL JOINT VENTURES (IJVs) AS A CORPORATE VENTURE.....	14

2.2.1 The Application of Joint Ventures (JVs) in the Construction Industry: Theoretical Perspectives.....	16
2.2.1.1 Institutionalism .....	16
2.2.1.2 Transaction Cost Economics.....	17
2.2.1.3 Resource Dependence.....	18
2.2.1.4 Strategic Behaviours and Organizational Knowledge and Learning.....	19
2.2.2 International Joint Ventures (IJVs) and International Construction Joint Ventures (ICJVs): What Do We Mean?.....	19
2.2.3 IJV in the Construction Industry: The Perspective of Ghana .....	23
2.3 CONCEPTUALIZATION AND OPERATIONALIZATION OF CONTROL MECHANISMS IN IJV.....	24
2.3.1 Control Mechanisms .....	27
2.3.1.1 Centralization Control.....	29
2.3.1.2 Formalization control.....	30
2.3.1.3 Socialization Control .....	30
2.4 Theoretical Perspectives on Control mechanisms, Control and Performance in ICJV .....	31
2.4.1 Resource Dependency Theory .....	31
2.4.2 Transaction Cost Economics Theory .....	32
2.5 PERFORMANCE ASSESSMENT IN ICJVs .....	33
2.5.1 Issues concerning the evaluation of ICJV performance .....	35
2.6 PERFORMANCE INDICATORS OF ICJVs.....	39
2.6.1 Project Performance.....	40
2.6.2 Partner Performance.....	41

2.6.3 Performance of the ICJV Management.....	41
2.6.4 Perceived Satisfaction with the ICJV .....	42
2.7 HYPOTHESES DEVELOPMENT .....	44
2.7.1 Personnel controls.....	47
2.7.2 Policy controls .....	50
<b>CHAPTER THREE .....</b>	<b>54</b>
<b>RESEARCH METHODOLOGY .....</b>	<b>54</b>
3.1.1 Research Methods for the Construction Management Discipline .....	54
3.2 RESEARCH APPROACH .....	55
3.3 RESEARCH DESIGN .....	56
3.4 RESEARCH STRATEGY .....	57
3.5 RESEARCH METHODS .....	57
3.6 SOURCE OF DATA.....	58
3.7 ETHICAL CONSIDERATION .....	59
3.8 QUESTIONNAIRE DEVELOPMENT.....	59
3.8.1 Pilot Study.....	59
3.8.2 Empirical questionnaire survey.....	60
3.9 STUDY POPULATION .....	64
3.9.1 Sample Size Determination.....	64
3.9.2 Sampling Techniques and Data Collection.....	64
3.10 DATA ANALYSIS AND STATISTICAL TOOLS .....	65
3.10.1 Structural Equation Model (SEM) .....	65
<b>CHAPTER FOUR.....</b>	<b>69</b>



<b>DATA ANALYSIS, RESULTS AND DISCUSSION.....</b>	<b>69</b>
4.1 INTRODUCTION .....	69
4.1.1 Sample Characteristics.....	69
4.2 DESCRIPTIVE STATISTICS (DEMOGRAPHIC DATA).....	69
4.2.1 Positions in the Firm .....	70
4.2.2 Working Experience in the Construction Industry .....	70
4.2.3 Working Level .....	71
4.2.4 Number of International Joint Venture Project(s) Involved .....	72
4.2.5 Area of Expertise .....	72
4.2.7 Type of Client .....	74
4.3 ANALYSIS OF THE CONTROL MECHANISMS USING PLS-SEM_ <i>Consistent PLS algorithm</i> .....	74
4.3.1 Initial Measurement Validation of Control Mechanism .....	75
4.3.2 Modified Measurement Validation of Control Mechanism.....	79
4.3.3 Mean, Normalization and Standard Deviation of Control Mechanisms.....	83
4.4 IDENTIFICATION OF PERFORMANCE MEASURES.....	87
4.4.1 Mean, Normalization and Standard Deviation of Items Measuring Performance in International Construction Joint Ventures (ICJVs).....	87
4.5 IMPACT OF CONTROL MECHANISMS UPON PERFORMANCE CRITERIA IN ICJVs .....	93
4.5.1 Measurement Model Evaluation .....	94
4.5.2 Structural Model Evaluation .....	98
4.5.3 Discussion of Results.....	102



<b>CHAPTER FIVE .....</b>	<b>110</b>
<b>SUMMARY OF RESEARCH FINDINGS, CONCLUSION AND RECOMMENDATIONS</b>	
<b>.....</b>	<b>110</b>
5.1 INTRODUCTION .....	110
5.2 SUMMARY OF RESEARCH FINDINGS .....	110
5.2.1 Identification of the mechanisms used to control the activities of International Construction Joint Ventures (ICJVs) by local partnering firms in Ghana .....	110
5.2.2 Identification of the criteria used by local partnering firms in assessing the performance of International Construction Joint Ventures (ICJVs).....	111
5.2.3 Impact of the control mechanisms used by local partnering firms on performance measures in International Construction Joint Ventures (ICJVs) .....	112
5.3 SIGNIFICANCE AND CONTRIBUTIONS OF RESEARCH.....	113
5.3.2 Contribution to Practical Values.....	114
5.4 CONCLUSION.....	114
5.5 RECOMMENDATIONS.....	116
5.5.1 Limitations of the Study.....	116
5.5.2 Future Research Directions.....	117

## LIST OF TABLES

Table 1.1 Approved recorded projects in Ghana by ownership type (2011 – 2016) .....	3
Table 1.2 Sectorial composition of recorded projects in Ghana under joint venture (2011 – 2016) .....	3
Table 2.2 Performance Indicators .....	43
Table 3.1: List of Control Mechanisms .....	61
Table 3.2: List of Performance Indicators .....	63
Table 4.1 Professional Background of the Respondents .....	70
Table 4.2 Working Experience of the Respondents in the Industry .....	71
Table 4.3: Working Level .....	71
Table 4.4: International Joint Venture Project(s) Involved .....	72
Table 4.6: Management Control within the ICJV .....	73
Table 4.7: Type of Client .....	74
Table 4.8: Initial Factor Structure and Loadings of Control Mechanisms Observed Variables (Using SmartPLS 3.2 Software_ Consistent PLS algorithm).....	77
Table 4.10: Final Factor Structure and Loadings of Control Mechanisms Observed Variables (Using SmartPLS Software 3.2_ Consistent PLS algorithm).....	80
Table 4.11: Final Quality Criteria and construct correlations of the Control Mechanisms (Using SmartPLS 3.2 Software_ Consistent PLS algorithm) .....	81
Table 4.12: Mean, Normalization and Standard Deviation of Control Mechanism .....	86
Table 4.13: Ranking of Key Performance Criteria in International Construction Joint Ventures (ICJVs) .....	89
Table 4.14: Measurement Model Evaluation .....	95
Table 4.15: Discriminant Validity of Constructs .....	96

Table 4.16: Analysis of Cross Loading for Individual Measurement Items (Latent Variables)...	97
Table 4.17: Structural Model Evaluation and Hypothesis Testing .....	99

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## LIST OF FIGURES

Figure 2.1. Construction joint venture and equity joint venture (adopted from Girmscheid and Brockmann, 2010).....	22
Figure 2.2. Dimensions of IJVs control (adapted from Giacobbe and Booth, 2009) .....	27
Figure 2.3 Research Model and Hypothesized Relationship .....	53
Figure 4.2 Structural equation model with factor loadings and path coefficient .....	100



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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Research

The globalization of the world economy and the intensification of domestic competition have created an environment in which firms struggle to win projects in traditional markets and expansions of their markets (Sillars and Kangari, 2004). This has led many firms to seek foreign markets (Demirbag and Mirza, 2000; Teegen and Doh, 2002; Kauser and Shaw, 2004; Elango and Pattnaik, 2007). However, stronger competition outside is causing firms to gather and combine strength, distinctive competencies and complementary resources through the use of joint venture (JV) (Kumaraswamy et al. 2000; Ozorhon et al. 2008). Collaboration with another firm in the form of joint venture has come to be a need or at least more advantageous when striving for a share in an international market (Mohr and Puck, 2005; Ali, 2008). A joint venture (JV) is simply the marriage between two or more legally distinct firms who contribute resources to a semiautonomous legally separate entity, of which they participate in the decision-making process (Geringer, 1988). In a situation where at least one partner is situated outside the venture operation country, it is termed international joint venture (IJV) as according to (Geringer and Hebert, 2002). Construction joint venture (CJV) refers to the cooperation that enables at least, two construction firms, two consultancy firms or between construction and consultancy firm, to combine resources and abilities in the duration of a project. Thus, it is an arrangement that enables two or more legally distinct firms to jointly carry out Architectural, Engineering and Construction (AEC) projects.

According to Lin and Ho (2012), international construction joint ventures (ICJVs) is highly employed for undertaking large-scale or international projects in the construction industry. Host countries with limited capacity or the required expertise to undertake a project are critically



dwelling on ICJV. Construction organizations develop IJVs for numerous reasons including sharing of risk, economies of scale realization, new market entry, bring advance technologies and management expertise (acquire knowledge), improve quality, reduce work at the project level and mitigate the effect of the cyclical domestic market conditions as well as establish continuing strategies for the balanced growth of domestic and international construction portfolios (Contractor and Lorange, 2004; Cheng et al. 2004; Zhang and Zou, 2007; Han et al. 2007). Nevertheless, the attractiveness of direct foreign investment through JVs in the developing countries is because they are a means of acquiring advanced technology, sustaining market development, as well as improving the managerial skills required to create economic growth (Li et al. 2000). Not far away, Ghana has since the mid-1960s established joint participation programme through regulation and administration of investment codes with the objective to develop, finance and contribute to national socio-economic development by building the infrastructure and productive facilities (Afriyie, 1988). Boateng and Glaister (2000) confirmed the very strong preference by foreign investors for IJVs in Ghana. Table 1.1 shows the approved registered projects in Ghana by ownership type for 2011 – 2016 period. From the table, out of the 1821 registered projects, a total 1226 projects (67.3%) were projects executed without JV arrangement by firms while the remaining 595 projects (32.7%) are Joint Venture (JV).

**Table 1.1 Approved recorded projects in Ghana by ownership type (2011 – 2016)**

<b>Year</b>	<b>Without JV arrangement</b>		<b>Joint venture</b>		<b>Total</b>	
	Number	Percent (%)	Number	Percent (%)	Number	Percentage (%)
<b>2011</b>	327	63.6	187	36.4	514	28.2
<b>2012</b>	239	59.9	160	40.1	399	21.9
<b>2013</b>	311	74.4	107	25.6	418	23.0
<b>2014</b>	135	73.4	49	26.6	184	10.1
<b>2015</b>	110	64.7	60	35.3	170	9.3
<b>2016</b>	104	76.5	32	23.5	136	7.5
<b>Total</b>	<b>1226</b>	<b>67.3</b>	<b>595</b>	<b>32.7</b>	<b>1821</b>	<b>100</b>

**Source:** Ghana Investment Promotion Centre, (2016)

**Table 1.2 Sectorial composition of recorded projects in Ghana under joint venture (2011 – 2016)**

<b>Year</b>	<b>Building/Construction</b>		<b>Others (Services, Manufacturing, Agric etc.)</b>		<b>Total</b>	
	Number	Percent (%)	Number	Percent (%)	Number	Percentage (%)
<b>2011</b>	49	26.2	138	73.8	187	31.4
<b>2012</b>	55	34.4	105	65.6	160	26.9
<b>2013</b>	61	57.0	46	43	107	18.0
<b>2014</b>	8	16.3	41	83.7	49	8.2
<b>2015</b>	19	31.7	41	68.3	60	10.1
<b>2016</b>	14	43.8	18	56.2	32	5.4
<b>Total</b>	<b>206</b>	<b>34.6</b>	<b>389</b>	<b>65.4</b>	<b>595</b>	<b>100</b>

**Source:** Ghana Investment Promotion Centre, 2016

From Table 1.2, out of the 595 joint ventures projects, 206 (34.6%) were building/construction projects. Though foreign direct investment in Ghana through international joint venture has gained

widespread attention, yet still, the rate at which it is growing is slow as compared to the previous years.

Unsurprisingly, many studies have emphasized on the unstable nature of this collaborative form (Parkhe, 1993; Zeng and Chen, 2003). In retrospect of the unstable nature as Cooper and Johnson (2000) and Tong et al. (2008) postulated are because of unpredictability of local environment, joint control challenges, organizational complexity and unreliable partners which makes management of IJVs difficult. Collaboration of this hybrid form is normally prone to misunderstanding and coordination difficulties due to differences in management or organizational practices (Groot and Merchant, 2000; Yan and Gray, 2001). Undoubtedly, Chalos and O'Connor (2004) and Porporato (2006) supported the assertion that management control problems are the main reason for such uninspiring performance. Thus, partnering firms in an ICJV may have differing interests. The control exercised by the partners over the IJV significantly determines the performance of the IJV (Yan and Child, 2004). IJV control is very important to explaining IJV performance and IJV success (Liu et al. 2014). Where control is lacking, IJV can bring down partners' ability to manage its activities, competently exploit its resources and successfully implement its strategy (Talman, 2009). Several studies and numerous efforts have been made to explore the relationship between control mechanisms and IJV outcome that enhances our understanding and knowledge of this collaborative form. However, the theoretical arguments and empirical findings remain incongruent (Huang et al. 2015). In spite of this, the relationship between control mechanisms and performance seems undeniable. Therefore, this study examines the proposition that the use of specific local partner control mechanisms stands to alter the overall outlook, design and potentially the performance of the JV itself, contingent on the level of involvement and extent or method of implementation.

## 1.2 Research Problem

The merge of foreign-local firms in the form of IJVs has emerged as acceptable mode of entry into developing country market (Mainela and Puhakka, 2008; Park and Harris, 2014). However, regardless of their increasing number as well as the opportunities they provide, performance has always been a problem (Robson et al. 2002; Brouthers and Bamossy, 2006). Many related studies on international joint ventures identifies the control exercised by the partnering firms over the IJV as an important contributing factor of performance (Yan and Child, 2004; Talman, 2009, Liu et al. 2014). Control is important for successful project execution (Beck and Schott, 2012). Where control is lacking over an IJV can bring down partners' ability to manage its activities, competently exploit its resources and successfully implement its strategy (Talman, 2009). As (ICJV) agreement is legally created by a contract which determines the constitutional rights and duties of partnering firms, partner firms naturally depend on various control mechanisms which influences performance in areas that cannot be counted in the ICJV agreement given the contractual limitations (Chalos and O'Connor, 2004).

Nonetheless, foreign partnering firms tend to exercise a lot of control in developing-country-based ICJV because they have the muscle, experience, control over exclusive technologies and linkages to much project sources which serve them the dependence that enhances its power over the venture. Consequently, there have been much focus on the impact of foreign partners' control mechanisms on performance in international business literature (Whitelock and Yang, 2007; Ghauri et al. 2013). While studies on foreign partners' control mechanisms are increasing in focus, the influence that local partnering firms have on the overall performance of the IJV itself has not critically been looked at. Previous studies have captured the intuition that partnering firms acquire more control when they contribute resources to the partnership (Luo, 2001; Lu and Hebert, 2005; Barden et al.

2005; Wong et al. 2005; Li et al. 2009; Shah, 2015). This has prompted the awareness that local partners know the local terrain, have much knowledge in the local business culture and important attributes which serve them much power to exercise much control in the IJV. Though according to Harrison et al. (2001), from the perspective of the resources complementary, the contribution of resources by both foreign and local partners serve as the foundation of IJV performance. However, through the provision of market-based resources (MR) (country-specific knowledge, contact with regulatory authorities, and more importantly, management of the local workforce), local partners help their IJVs to succeed (Inkpen and Beamish, 1997). Generally, market-based resources are both location and firm-specific in nature (Pan and Chi, 1999). Therefore, the local partner's contribution to the IJV acts as an important determinant of IJV success (Kim et al. 2011). In a simple term, MR as defined by Griffith and Harvey (2001) refers to knowledge that arises as a result of communication with external local entities, including customer relationship, channel members, partners, and government agencies. These resources are often complementary to that of the foreign partners, which come in the form of capital, brands and technology (exposure and experience) (Kim et al. 2011). Local partners have a greater motivation to exercise much control given their limited local demand. As control is likely to vary across multiple perspective situations, it viewpoints to reason that the control exerted by the local partners helps to determine direction, focus, and overall operational goals and this should have a major impact upon the performance of the ICJV. The relationship between control mechanisms and performance, while increasing focus, is still lacking in sufficient attention and detail to enhance IJV research (Ghauri et al. 2013).

Further, majority of the contemporary works on IJVs control mechanisms and performance focuses on the business industries and rationality of concepts have not been comprehensively studied empirically in the building industry. Therefore, this study aims at investigating the impact of local



partner control mechanisms on performance measures in International Construction Joint Venture (ICJV) in Ghana.

### **1.3 Research Aim and Objectives**

#### **1.3.1 Aim**

The aim is to investigate the impact of local partner control mechanisms on performance measures in International Construction Joint Ventures (ICJVs) in Ghana

#### **1.3.2 Objectives**

The following objectives **were** set to achieve the aim of the study:

1. To identify the mechanisms used to control the activities of International Construction Joint Ventures (ICJVs) by local partnering firms in Ghana;
2. To identify the criteria used by local partnering firms in assessing the performance of International Construction Joint Venture (ICJVs) in Ghana; and
3. To assess the impact of the control mechanisms used by local partnering firms on performance measures in International Construction Joint Ventures (ICJVs).

#### **1.4 Scope of the Study**

This study focuses contextually on the relationship between foreign and local partnership in construction joint venture in Ghana and tailored to investigate the impact of local partner mechanisms of control on performance measures. With the increasing focus of infrastructure development in Ghana, a number of foreign firms have partnered with local firms to deliver construction projects as well as consultancy services in the country. Joint venture companies established under the notice of government in Ghana were targeted for the study.

## 1.5 Research Process/Approach

Investigating the impact of local partner control mechanisms on the performance measures in ICJV is the main focus of the study. To achieve this, there is the need to adopt appropriate research design, research method and analytical techniques that will help come out with a full and more acceptable comprehensive understanding of the results. Creswell (2009) defined *research design* as the information needed to provide mounting results to the research questions in every study and indicates how research data will be gathered and analyzed. Burns and Grove (2003) simply puts *research design* as the plan for carrying out a research study. Research design can either be Descriptive Research Design or Correlational Research Design.

The descriptive research gives a clear image of a circumstance as it happens naturally (Burns and Grove, 2003). Thus, situations are usually described using descriptive research design. Individuals' profiles, situations or events are the basic measurement item in descriptive research. It is also employed for the justification of current practices, to make judgement and to develop theories. This also focuses on clarifying the existence of a correlation that exist between two or more aspects of a situation or phenomenon as well as predicting future occurrences. This is generally measured by research questions or hypothesis which specifies the direction and nature of the relationship between the variable being examined. Correlational research design comes in where there is the need to possibly investigate the relationships among variables without trying to influence those variables. However, the degree of relationship between the variables is of much concern.

*This study employed correlational research design with hypothesis testing approaches to expand the understanding and give a full picture of the impact of different local partners' control mechanisms on performance measures in international construction joint ventures (ICJVs) in Ghana.*



A sound and clear research method is needed for undertaking a research. The ethics and measures of reasonable thought applied to a scientific investigation is research methodology (Fellows and Liu, 2015). This research was built on purely quantitative method to provide an insight as well as improve the accuracy, quality and to generalize the findings at the end of the study. Quantitative method was employed to gather factual data and study the impact of control mechanisms on the performance measures, utilizes questionnaire survey, evaluated by statistical methods, and lastly conclusive findings to commend a final course of action. More importantly, this method increased the study robustness and rigor, consequently improving its validity and allowing a bottomless study of the impact of control mechanisms on the performance measures in ICJV from diverse perspective.

A two-stage approach was employed for the study; firstly, germane literature was reviewed to ascertain subjects on control, control mechanisms and performance measurement in IJVs through the use of journals, unpublished thesis, publications of corporate bodies and books. The information gathered from the literature review and the preliminary findings influenced the development of the questionnaire used for the study. Lastly, data collection was done via questionnaire survey. With an extensive review of literature, followed by a pilot survey, a final structured questionnaire survey was carried out on local professionals (Executive officials, General managers and senior members) in construction joint venture with foreign construction firms in Ghana with two-man goal; mechanisms of control and satisfaction level of performance based on some distinctive measure of performance indicators. The focuses on these key informants is that, they are the top management decision-makers and have knowledge of the firm, familiarity with the environment of the firm, have access to strategic information and knowledge on the performance of the organization (Zhou et al. 2010). Targeted respondents mail addresses were

identified from companies' directory, which a mail letter including a link to assess an internet-based survey was directed to all companies to elicit information pertaining to area under study and contingent on the objectives. Afterwards, a reminder e-mail would be sent to non-respondents three (3) weeks later.

Analysis of the data was done using descriptive statistics and Partial Least Squares – Structural Equation Modelling (PLS-SEM) techniques to determine the impact of the various mechanisms on performance measures. Thus, the path modeling technique was utilized in this study.

### **1.6 Significance and Value of the Research**

The impact of local partner control mechanisms on performance measurement in IJV remains a critical omission in the development of a complete theory of IJVs in both the manufacturing and the international business literature. Realizing desired performance is linked with partnering firms building and altering their control structures accordingly. This calls for attention to increasing the understanding of how each partner distinguishes and uses control in the management of a venture. By theoretically establishing and empirically examining the impact of local partner control mechanisms upon measures of performance in ICJV, the outcome of this research will increase our understanding that through the adoption of multiple performance measurement, there are greater implications of different aspects of control of an ICJV. This information is imperative for both managers and theories in the field of international joint venture management in numerous ways.

Practically, managers can employ this study as a direction for making decisions related to the effective way of exercising control for the benefit of project as well as the IJV itself. Consequently,

the study give support to the understanding that, employing control mechanisms that improves the performance goal can provide support during the creation and negotiation process in ICJV.

Theoretically, there has been virtually no empirical study that studies the implication of local partner control mechanisms on the performance measures in ICJV. Thus, this study is one of very few studies developing a path modeling of different control mechanisms on performance measures from the local partner perspective. This study theoretically gives firm foundation to the construction industry, which is valid and educational for related fields concentrating on several other forms of cooperative relationships.

## **1.7 Thesis Structure**

The whole thesis contained five (5) chapters.

Chapter 1 presented the general overview of the study. This section covered the background of the study, the problem statement, research aim and objectives, scope of the study, as well as the research method adopted. More importantly, the value and justification/significance of this study are also presented.

Chapter 2 presented the theoretical views of IJV application in the building industry and presented a comprehensive desktop review of past literature on ICJVs. The scope of the review mainly included the identification the various mechanisms that are used to control and coordinate the activities of (ICJV) and measures used by local partnering firms in assessing the performance of (ICJV). Further, the hypothetical development was highlighted. Theoretical prepositions regarding the interrelations between attributes of various control mechanisms and their influence on ICJV performance measures was presented.

Chapter 3 outlined the research framework and the methodology adopted throughout the study. That included; data collected through desktop study, population and sampling techniques utilized, questionnaire design and the data analysis tools utilized for the study.

Chapter 4 presented the analysis of the questionnaire survey and discusses the finding of the result.

Finally, chapter 5 presented the summary of findings, conclusion and highlighted on the recommendations and limitations of the study as well as suggestions for future research are also presented here.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

International joint ventures (IJVs) have come to be a significant research focus for some decades now basically because of the contributions they make as strategic alternative with respect to global competition (Özgen, 2007). One strategic ways which Architectural, Engineering and Construction (AEC) firms used in exploiting business opportunities as they enter into foreign markets is the forming of IJVs. Chowdhury and Chowdhury (2002) posited that, JV have increased tremendously in the developing countries because firms in these precincts try to attract investment from foreign partners which JVs function as the means for foreign participation. Due to the major contribution from the construction sector to socio-economic growth as Bhattacharya et al. (2002) and Zuo et al. (2013) postulate, construction investments in developing countries have been increasing (Hwang et al., 2017). From a different perspective, emerging countries perceive JVs to be one key instrument that can be used to prevent the dominance of the foreign investors undertaking projects wholly by themselves. Countries such as Indonesia, Malaysia, Egypt, Nigeria, South Africa and particularly Ghana do not permit foreign subsidiaries to fully owned and operate in their country states. In the Ghanaian construction industry, the Public Procurement Act clearly states the condition for such collaboration agreement in acquiring public works. Entities of such caliber are difficult in managing them as their structures involve varied managerial and organizational styles, control as well as interest. Therefore, many IJVs do not deliver the hope-for results and fail (Talman, 2009).

Considering the unstable nature of IJV in the emerging countries, ICJVs deserves an extensive research



The study's objectives were in three-fold, that is, to identify various mechanisms that are used to control and coordinate the activities of ICJV, the second one is to identify the measures used by local partnering firms in assessing the performance of ICJV. Further, the theoretical prepositions with regards to the interrelations between the various attributes of the control mechanisms including their influence on the performance measures of ICJV are investigated.

## **2.2 BACKGROUND OF INTERNATIONAL JOINT VENTURES (IJVs) AS A CORPORATE VENTURE**

Strategic alliances in the context of both domestic and international businesses have been discussed extensively over some decades now because it is now an imperative constituent in building competitive advantage (Xu et al., 2005). Ozorhon et al. (2008) posited that, Joint Ventures (JVs) are special type of strategic alliance which offer distinctive opportunity for combining the characteristic competencies including the corresponding resources from partnering firms. According to Harrigan (2003), 'Joint Venture' as a term originated as maritime or commercial businesses used serving the purposes of trading. JV constitute one of the oldest co-operative forms employed as a device by the Ancient Egyptian merchants including merchants from Mesopotamia to direct commercial transactions overseas (Demirbag and Mirza, 2000). What is present in this modern era, however, is the apparent expansion in the usage of this collaborative form.

As joint ventures have proliferated so has research aimed at increasing knowledge on consequences of their use. Unfortunately, these research publications have presented uneven definition to describe the term "Joint Venture", mostly with akin characters of JVs combined. Lynch (1989) defined JV as '*a collaborative activity of business set up by two or more distinct*

*organizations that create a new entity that is independent of the parent firms and thus allocate operational responsibilities including reward and financial risk to the partners involved, yet protecting the autonomy or identity of each partner.* The definition of Tomlinson (1970) somehow differs to some extent from Lynch's definition as he said '*JV constitute an agreement between at least two legally separate entities where there exists commitment of services, funds, and facilities to an enterprise for the benefit of the partners involved over time.*' The subsequent definitions present a broad taxonomies Joint Ventures: equity then non-equity Joint Ventures. A JV regarded as equity involves an arrangement between at least two organizations as a distinct legal entity who share resources whereas the non-equity JV covers an extensive array of votive arrangement so as to ensure cooperation between the partnering firms (Hennart, 1988). In fact, a commonly adopted definition is that of Geringer (1988) who defined a joint venture as an involvement between at least two legally separate firms each involved in making decision for running activities of the new formed entity. Sillars and Kangari (2004) also considered a JV as a new entity formed temporary as an association between one firm and its partners or partner for the purpose of undertaking a project. The adoption of JVs in the developed countries has sprung up basically because of economic and technological changes which has precipitate globalization, deregulation as well as the quest for product innovation (Hong, 2014). A number of factors have contributed to the success of JV in mature economies like UK, Japan, USA, Russia and China. Thus, economies like Tanzania, Singapore and Malaysia have embraced the formation of Joint Venture as means of accelerating, expanding and improving business (Nani and Opoku, 2015).

Nonetheless, alliances between and among multinational firms have become popular as a result of businesses increasing its globalization. International concerted setups are progressively significant factor in the internationalization plans of companies (Buckley and Park, 2014). International Joint



Ventures (IJVs) is among the most important arrangements generally characterized by transnational partnerships (Buckley and Park, 2014). An International Joint Venture constitute a cooperative device in which two or more legally distinct organizations share joint resources in a mutually owned, legally distinct company so as to enhance their interest (Park, 2007). IJV began emerging significant in the latter part of 1980s, and a number of changes came alongside its advancement (Demirbag and Mirza, 2000).

### **2.2.1 The Application of Joint Ventures (JVs) in the Construction Industry: Theoretical Perspectives**

The emergence of JV is captured under four major theoretical areas; institutionalism, transaction cost, resource dependency, Strategic Behaviours and Organizational Knowledge and Learning (Williamson, 1994; Demirbag and Mirza, 2000). All these theories focus on the achievement of strategic objectives by firms. However, each theory comes with its own focus, and is viewed as complementary instead of competing (Özgen, 2007). Institutionalism focuses on guiding principles; resource dependency theory on obtaining resources; transaction cost theory on cost minimization; strategic behavior theory on profit maximization; and organizational learning on knowledge.

#### ***2.2.1.1 Institutionalism***

Today, “system of governance does matter” is considered a proposition taken instead of a debating issue (Ho et al. 2009). In sociology, from the institutional perspectives, organizations fulfil their objectives by structuring the arrangements of their respective members, whose activities are influenced by cultural values, norms, or rules. The institutional theory emphasizes that firms or

institutions that are set in a field cooperatively build realities tied to society that guide the line of action for firms and thus assisting them to preserve the system of the society (Knoke, 2001). Under internationalization system, organizations adopt structures and practices that are similar and most frequent in their field so to achieve environmental fitness and acceptability.

One of the organization's cooperative approaches, that is, the definitive preeminence of Joint Ventures to the activities of other contracts is dependent on the providing of platform for shaping the partnering firms and adopting consented working practices which stand to tackle the normative requirements of institution so as to achieve social legitimacy.

#### ***2.2.1.2 Transaction Cost Economics***

Williamson (1994) developed the transaction cost economics theory, which he advocated that companies or cooperate entities chose other mechanisms that reduce the overall transaction and production costs. The explanation to the theory is viewed in the understanding of variations in the activities of the economy and organizational structures that will include contracting the production and distribution of services and goods (Knoke, 2001). For specific conditions of the environment, Williamson (1994) provided three significant forms of governance: hierarchies, markets, and hybrids. Markets has to do with the economic situations where completely independent parties engage in the exchange of resources, however, hierarchies on the other hand constitute formal organizations who place transaction under combined proprietorship. Hybrids also has to do with a lasting contractual relation that preserve the autonomy of each party (Knoke, 2001). According to Hong (2014) the assortment of the most appropriate organizational form is reliant on evaluating the three scopes of transactions, under cost theory of transaction. These dimensions include: transactions uncertainty, asset specificity and frequency. Asset specificity is concerned with the

specialization of asset to support transaction (Kogut, 1988). The reduction or increase in asset specificity of both partner requires adaptive collaboration in order to avert opportunism (Knoke, 2001). Uncertainty is well-thought-out to include situations for which no probability distribution is distinct.

In the construction industry, IJVs reduces transaction costs arising from the uncertainties of projects, this is evident in large-scale projects with planning difficulty as well as technical complexity.

### ***2.2.1.3 Resource Dependence***

The theory of resource dependency base view in alliance formation is rooted in the social exchange concepts that is contingent on the lucid choices including decisions by the actors, who seeks to acquire more profits as of socio-economic transaction (Blau, 1964). The theory explains how inter-organizational relations is formed from combined struggle to come into agreement in terms for resource exchange (Cook, 1977). The resource dependence theory emphasize that organizations have particular resources where few of these firms are independent in these assets (Saffu and Mamman, 2000), thus they ought to depend on other firms for imperative resources. The lack of strategic resources (i.e. basic competencies) is viewed to be the impelling cause for inter-organizational relations as well as the means for reducing uncertainty (Özgen, 2007). The development of IJV relationships ensure the reduction of uncertainty which organizations may not have the needed resources to meet the market demands, this increases the chances of firms surviving the market. In the construction industry, the dependency theory gives explanation to why an IJV is formed to undertake construction project. According to Geringer (1991), the need for partners' resources and complementary skills (like market access, market knowledge, local identity, and marketing channel) is the main motivation for the formation of IJV. Resources like

equipment, technical skills and expertise are the major resources that enhances the collaboration of IJV in the construction industry.

#### ***2.2.1.4 Strategic Behaviours and Organizational Knowledge and Learning***

The emergence of IJV is to erode competitors' positions, and it is motivated by strategic behaviours (Kumaraswamy and Shrestha, 2002). Other studies also reveal that; IJV is constitute a defensive form of investment through which organizations shield resources against uncertainty, mostly where there is moderate concentration (Hong, 2014). In the industry of construction, increasing a firm's competitive position in the sector is seen as one of the key drivers of establishing ICJV (Özgen, 2007). The easiest way for foreign contractors gaining access to indigenous market is by using IJV with local Ghanaian firms.

From the perspective of organizational knowledge and learning, IJV is a channel through which tacit knowledge is transferred. This is encouraging under two conditions: either of the partners to the IJV may desire to acquire the others organization knowhow, or specifically preserve the capability of the organization whiles benefiting from cost advantage and other existing knowledge (Hong, 2014).

#### **2.2.2 International Joint Ventures (IJVs) and International Construction Joint Ventures (ICJVs): What Do We Mean?**

Unlike ICJVs, international joint ventures have been documented to exist all around the world (Contractor and Lorange, 2002). It is key to have this in mind that ICJVs and IJVs differ significantly. ICJVs defined in the context of this study, is narrow to cooperative/procurement

approach utilized by Architecture Engineering and Construction (AEC) firms. JVs incorporate at least two levels: the JV itself and the parties involved, and where partners and the JV constitute part of the JV system (Girmscheid and Brockmann, 2010). If the partnering firms come from separate countries, then the JV becomes IJV. A study by Girmscheid and Brockmann (2001) comparatively distinguished between IJVs and ICJVs. Whereas ICJVs are contractual joint venture IJVs are mostly equity joint venture. Hong (2014) conducted a critical review to support this dissimilarity by explicitly indicating that, CJV is structured by construction contract and joint venture contract which is signed by the project client. This fact allows no one to transfer IJVs' findings to that of ICJVs without any proof.

According to Hennart (1988), equity JVs “arise whenever two or more sponsors bring given assets to an independent legal entity.....” and, delimited by a company and a JV contract (Girmscheid and Brockmann, 2010). The JV contract gives description of the JV's goal in general terms, the whole period of the existence of the IJV, and the amount of equity. Figure 2.1 depicts these contractual relationships for four different firms from separate countries. Equity JV has the tendency to develop and then grows.

Contractual joint ventures are controlled by two contracts which are of different types. With equity, there exists a JV contract which determine internal relationships. However, external contract as an addition is signed when it comes to contractual joint ventures (Girmscheid and Brockmann, 2010). In the construction sector the contract is between the partnering firm and the client. According to Hinze (1993), the contracts in construction defines the budget, the task as well as the period for the project with exactness. The construction contract exert pressure on the ICJV for purpose of making task fulfilment the paramount in the JV. Basically, ICJVs are formed in order to develop significant engineering projects. Thus, ICJVs can best be described using performance ambiguity,



contextual turbulence (Fryxell et al. 2002) and complexity. The formation of ICJVs constitute a network of contract relationships between at least two construction firms, consultancy firms, suppliers, design firms, subcontractors, and organizational networks of clients.

In short ICJVs serves directly both parties, that is, the client and the partnering firms. Time, budget and task are clearly known. The period for the project is usually short (Hassan et al. 1999). Cultural, task, and social complexities stand high. Likewise, equity JV favour the partnering firms only and because the goal is unknown, they need time for their development.



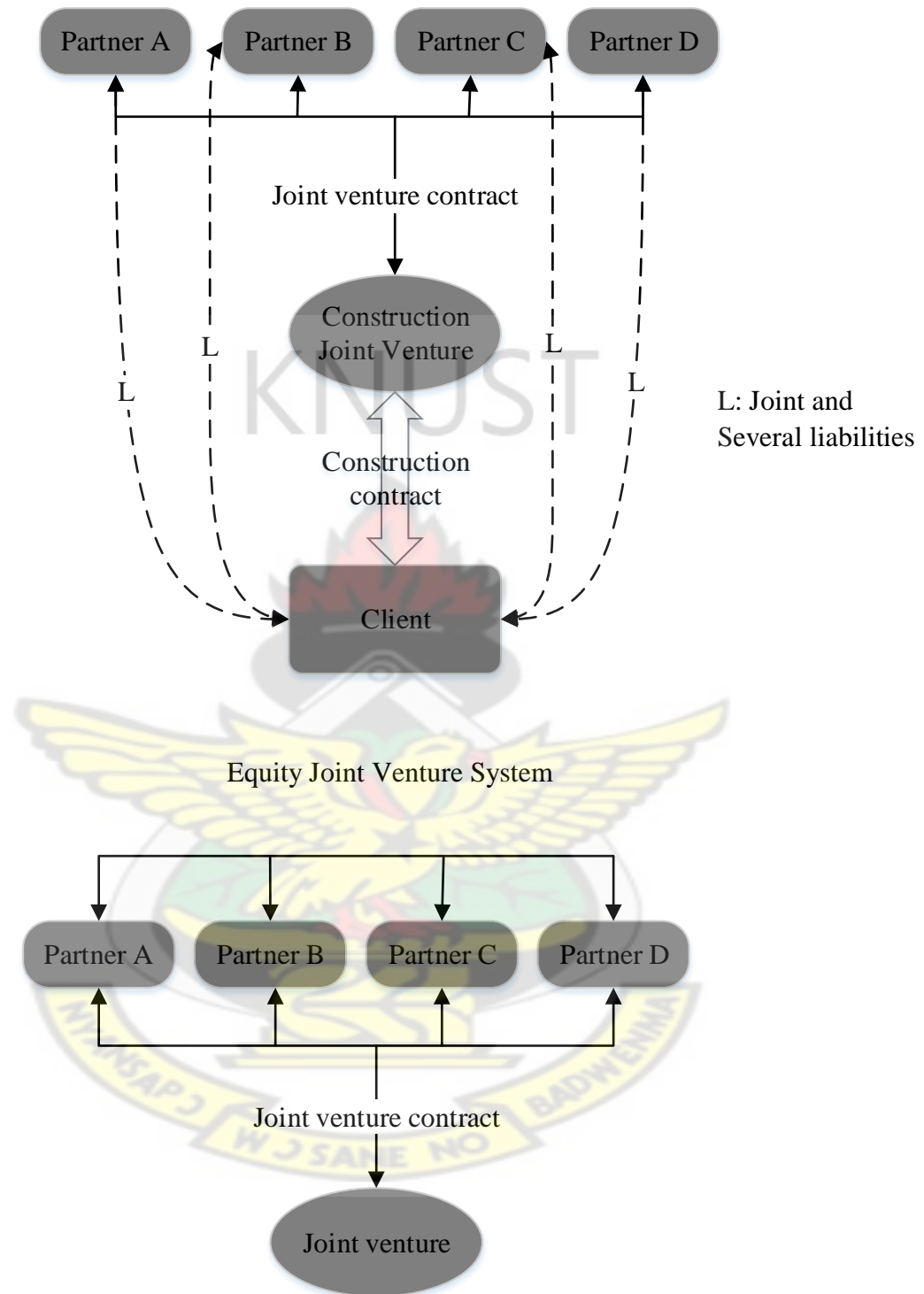


Figure 2.1. Construction joint venture and equity joint venture (adopted from Girmscheid and Brockmann, 2010)



### **2.2.3 IJV in the Construction Industry: The Perspective of Ghana**

ICJVs have surfaced as innovative way of undertaking projects in West Africa. Through the transformation of economic liberation policies, there have been the creation of various business forms with the foremost form being the solely owned enterprise by local entrepreneurs and IJVs between entrepreneurs/firms from foreign countries and the local entrepreneurs/firms (Demirbag and Mirza, 2000; Beamish and Delios, 1997). With regards to Ghana, changes made to investment legislation over a decade or two have favoured the formation of IJV as a tool to attract foreign direct investment (FDI), for instance, the *Ghana Investment Promotion Acts* of 1994 and 1995 have encourage firms from foreign lands to form IJVs instead of creating a solely owned enterprises by demanding foreign firms to make investment of a lower equity capital for international joint ventures rather than a solely owned enterprise (Boateng and Glaister, 2003; Debrah, 2002). Similarly, the Local Content and Local Participation, Regulation 2013 L.I 2204, requires that a foreign Ghanaian firm which plans to provide services in the country forms a JV firm with local firm and afford that local Ghanaian firm an equity participation of a minimum of 10%. Similar practices exist in Libya for instance, where foreign companies are required to enter into joint ventures with local entities and where the foreign company is only allowed to hold a maximum of 49% equity stake.

The main reason why governments from developing countries favour international joint ventures is that they want to attract foreign investments and capital to improve some major strategic sectors of the economy whiles in unison attaining local control over those sectors of the economy (Boateng and Glaister, 2003; Acquaaah, 2009). At times, government policy encourages this so that local partners will tap and learn from the foreign partners, and if they have a policy like that, with time they deliberately reduce the inflow. Further private companies in developing countries go into

ICJVs relations through the selection of partners who can assist them financially and are with intangible assets, managerial and technical abilities to produce quality (Hitt et al. 2000). Correspondently, the focus of firms from foreign lands for establishing ICJVs relation in developing countries varies as reported by Acquaah (2009). The widely known motive extensively covered in literature has to do with accessing and exploiting required resources as well as other abilities so as to improve the strategic positioning of the firm through competitions (Kogut, 1988; Inkpen, 2001; Glaister, 2004). Nonetheless, the actual motives of forming ICJV in Ghana by firms from foreign lands are to dazed barriers mandated by the government, to access the local market, and to facilitate cost and risk sharing.

### **2.3 CONCEPTUALIZATION AND OPERATIONALIZATION OF CONTROL MECHANISMS IN IJV**

The issue of control has been a source of appreciable discussion and so therefore, it is not surprising that a variety of approaches to conceptualizing and operationalizing control for the past decades. Control characterizes a critical element of an organization's ability to direct its own undertakings and to ensure that its IJV is managed in ways consistent with its strategy, interests and objectives (Hebert, 1996). The definition of control by Killing (1983) as the degree of power or authority that each partner exercises in influencing the IJV to realize its goal, have widely been embraced by many researchers to conduct their studies on control and performance relationship. However, results of these studies are varied (Li, 2012). For instance, Steensma and Lyles (2000) in their study reported that, shared control result better IJV performance. Choi and Beamish (2004) also argued that there is no performance difference between shared and dominant control in IJV operation. In the same line, Zhang and Li (2001) found that, shared management IJVs tends to have worse performance than dominant parents IJVs. This is to say that, the importance of IJV

control varies, especially in the relation to IJV performance. Li (2012) stated that, the overall goal of exercising control in IJVs is to get predictability through directing mean, and thus creates confidence that other partners will not behave opportunism. Generally, Control can be achieved through governance structures, contractual specifications managerial arrangements, and other more informal mechanisms (Das and Teng, 2001). Basically, control can be described within the perspective of controlling the partner or the ICJV *per se*. Often, the two are discussed in an integrated manner. Nonetheless, because of the managerial complexities of IJV management, control has been found to facilitate coordination Luo et al. (2001) as well as learning (Lane, 2001). Thus, effective exercise of control results to the satisfactory achievement of alliance performance.

In a narrowed perspective view, the current study relied on the notion of control defined by Geringer and Herbert (1989) as *“the process whereby one partner effects, to varying degrees, manner of acting and output of the partner, via the use of power, authority and an extensive range of bureaucratic, cultural and informal mechanisms.”*

Geringer and Herbert (1989) provided a very useful model to aid in conceptualizing the complex control dynamics of IJVs. They provided three dimensions to aid the understanding of control in IJVs. They are mechanisms, focus, and extent of control. The control mechanism is simply the channel of influence implanted by a partner to control the IJV. Li (2012) define the mechanism as the means by which control is exercised. Ghuari et al. (2013) emphasized that, control extent is determined by the level of control exerted over specific control mechanism. Giacobbe and Booth (2009) claimed that, the extent of control is the degree to which a partner exercise control over the various activities of IJVs. The focus of control is the area of the operation of the IJV over which partners exercise control. In other words, it the scope of activities which a partner seeks to exercise or not exercise in IJV (Giacobbe and Booth, 2009; Li, 2012).

Consequently, according to Giacobbe and Booth (2009) partners have to identify and select operational areas of their IJVs that they demand to control (Focus of control), which their selection ranges from only a few or more specific (narrow focus) to a larger set (broad focus). Kauser and Shaw (2004) confirmed that majority of IJV partners see control over specific “strategically important activities” rather than control over the whole IJV. Some critical areas which partner firms focus more in IJVs include: 1) procurement, 2) general management and operation, 3) research and development, 4) production and quality, 5) finance and accounting, and 6) human resources (Le and Jorma, 2009). Individual partners’ ability to influence activities as well as decisions is limited by the presence of other partner(s). Therefore, for each operational area individual partners may be able to exercise control on a range from ‘none’ to ‘total’ control or ‘loose’ to ‘tight’ control (Extent of control). This tightness, or loose extent of control, can be placed upon any control system, such as personnel or cultural controls in order to achieve the desired results (Ghuari et al. 2013). Lastly, partners have choice as to the mechanism of control, ranging from formal to informal, that they can seek to deploy to achieve the desired focus and extent of control (Giacobbe and Booth, 2009). Figure 2.2 is a graphic representation of the model.

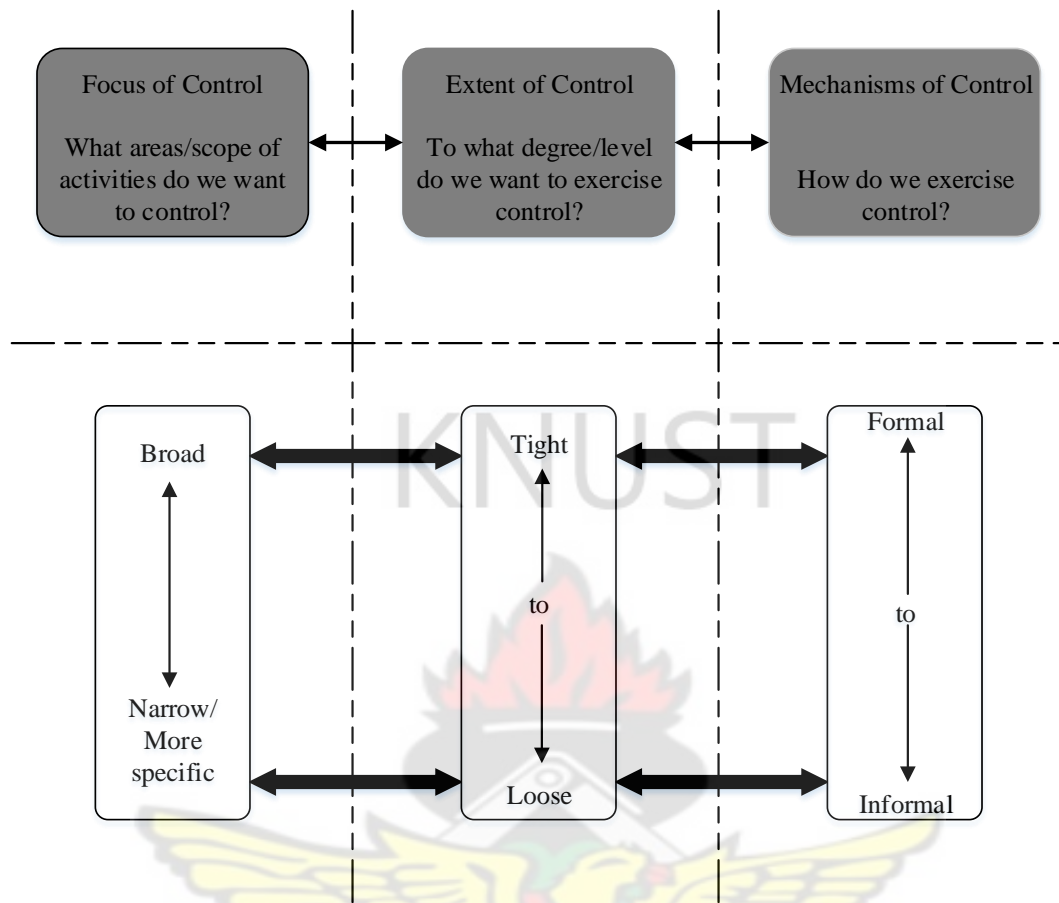


Figure 2.2. Dimensions of IJVs control (adapted from Giacobbe and Booth, 2009)

### 2.3.1 Control Mechanisms

Control mechanism captures the dynamics of arrangement installed or implanted by a partner to control the IJV (Ghuari et al. 2013). Giacobbe and Booth (2009) added that control mechanisms include tools that are engaged to exercise control from social activities to stringent rules and regulations. Past studies on mechanisms of control propose that two basic types of approaches to control exist. They include: internal value-based and external measure-based controls (Jagd, 2010; Das and Teng, 2001). The first approach places emphasis on organizational values, norms, culture, as well as the internationalization of objectives to hearten desirable outcome and behaviour. The second approach on the other hand focuses on setting-up and utilizing formal rules, policies, and



procedures to monitor and offer rewards to inspire better performance. The control is aimed at reducing goal disparities and preference variance among members of an organization (Das and Teng, 2001; Fryxell, 2002). Yan and Gray (2001) put forward that control may in some cases be broken down as follows: structural, strategic, and operational. They referred to strategic controls which determine and examine IJVs' strategies, goals and objectives. Structure control defines the limit of autonomy which a party is allowed in IJV management. Operational control also defines the day-to-day control of IJV's operations. In the same manner, Fryxell et al. (2002) classified control mechanisms as social and formal. The formal includes cybernetic (relating to information processing) and the ones aimed at given protection to resources of the parent companies, with two broad aims. The first aim of the control mechanisms is basically detecting behaviour as fast as possible. The second is aimed at reducing the possibility of opportunistic use of assets put together by the parent firms. The authors extend their definition to show that mechanisms which involve reporting, hierarchy, and planning fits well in the group. Social control mechanisms, in its place, are planned to allow the *'.....evolution and integration of values and norms using structured personal training and interaction'* (Fryxell et al. 2002). In literature, "social control" and "informal control" has been used interchangeably (Li, 2002).

In short, there are numerous definitions as well as classifications of mechanisms of control. However, the two display significant similarities as where they differ they in most cases complement themselves. Drawing on relevant research, in this study, we adopt three types of control mechanisms (namely centralization, formalization and socialization) as our independent variable (Fryxell et al. 2002; Lee et al. 2011; Li, 2012; Li et al. 2013; Huang et al. 2015). Adequate control mechanisms may have several important functions (Huang et al. 2015), like increasing the transparency of partners' behaviour; to achieve expected objectives and ensuring that the IJV can



faithfully pursue strategies that conform to the interest of the parent companies (Pangarkar and Klein, 2004).

#### ***2.3.1.1 Centralization Control***

According to Schepker et al. (2014) the distribution of decision right is a means of safeguarding. Centralization refers to the amount of decision-making power each partner company exercises with regards to the venture daily operations (Yan and Gray, 2001). Child and Yan (2001) also represent centralization as strategic controls. This is captured in numerous studies, that individual partners have relatively limited authority or freedom to make strategic and operational decisions independently when partners fall on centralization control (Glaister et al. 2003; Reus and Rottig, 2009). This limits the autonomous power of the foreign partner to exercise centralization control. With the adoption of centralization, partners can define how activities of IJV are undertaken so that the IJV conform to its own objectives (Yan and Gray, 2001). Centralization is therefore a key dimension in the structural design of ICJVs, which can affect the capacity and capability of information processing. This can be done through effective communication and efficient information reporting systems (Huang et al. 2015). Complete information reporting systems in ICJVs involves the gathering, interpretation and production of information for the management of the ICJV. Partners can communicate their expectation to ICJV managers and partners through the planning and budgeting process of the organization. Building on literature from the international business perspective, in the construction sector, this can be seen in either strategic or operations-related areas. The strategic-related information reporting system will focus on financial performance, business development, budgeting etc. while, operations-related information reports on; construction progress and inspection report, legal contracts and regulatory documents,

construction schedules and cost estimates, performance reporting, reporting accidents and incidents at work, final cost estimation, scheduling and monitoring etc.

#### ***2.3.1.2 Formalization control***

In literature, formalization is treated as a type of bureaucratic control that consists of employing limits and an explicit set of rules, policies and regulations to delineate the desired performance in terms of output and/or behaviour (Huang et al. 2015). Formalization emphasizes these matters through contract, formal written procedures, policies, and individual performance appraisals (Wang and Fulop, 2007). As indicated earlier, formal control protects the resources of the firms involved by rules, regulations and standards. Fryxell et al. (2002) posited that, with rules and regulations the identification of opportunism will be made easier and will be dealt with as soon as possible. Handling the problem of opportunism is crucial concern for organizations with a hybrid (foreign and local) governance structure (Luo, 2005). Thus, formal control stands to be an important mechanism in decreasing the chances of opportunism (Li, 2012). This instrument of formalization control is normally decided and then imposed on both parties (i.e. foreign and local partner firms). The important mechanisms for control include the appointment of important personnel, planning as well as approval process to ensure resource allocation and capital budgeting, lay down procedures including routines for IJVs, staffing of management positions, supervision etc. (Lu and Hebert, 2005; Giacobbe and Booth, 2009).

#### ***2.3.1.3 Socialization Control***

Ertug et al. (2013) advocate that, social control mechanisms generally have a direct effect on informal sharing and two-way communication among partners. In the extant literature, socialization refers to the extent to which partnering companies create shared norms and value and controls the behaviour as well as decision making of its IJV through social interactions (Chalos

and O'Connor, 2004). Socialization is associated with the development and shared norms and collective culture (Huang et al. 2015). Through socialization, JV partners learn to share common attitudes and knowledge of the organization (Chalos and O'Connor, 2004), and encourage the alignment of partner values and interest, which reduces the likelihood of opportunism and enhances IJV performance. According to Dong et al. (2008) socialization in partnership can be achieved through reciprocal business skill training, mutual technical development, frequent managerial contacts, and exercises involving relational behaviour. Socialization, including partner visits, group communication, and joint training programs facilitates mutual understanding and development of shared values and norms (Fryxell et al. 2002). More importantly, Li (2012) emphasized that, there is always a reduction of monitoring and contraction costs and thus permit the flexibility as well as adaptability that are critical to long-term performance in IJV. Some social control includes, meetings and organized personal contact, networking and other socialization processes, teams and taskforces, rituals, traditions and ceremonies etc.

## **2.4 Theoretical Perspectives on Control mechanisms, Control and Performance in ICJV**

The most widely adopted theory in the international business literature for joint control strategies is the resource dependency theory and transaction cost economics (Zhan et al. 2009; Kim et al. 2011). The present study also employed these theories to give a broader understanding and explanation of the impact of local partner control mechanisms on performance in international construction joint ventures (ICJVs).

### ***2.4.1 Resource Dependency Theory***

In the construction industry, the goal of a collaborative venture is to synergistically combine complementary resources, both partners will contribute resources that are required for the success of project operations and the achievement of the venture goals. The contribution of various

resources by partners in ICJV act as a critical factor in determining patterns of ownership and control, this may raise an ICJV partner's relative bargaining power with respect to its counterpart (Özgen, 2007). Though according to Harrison et al. (2001), from the resources complementary view, both the foreign and local partners' resources combined function as the foundation of IJV performance. However, through the provision of market-based resources (MR) (management of the local workforce, contact with regulatory authorities, and more importantly, country-specific knowledge), local partners help their IJV succeed (Inkpen and Beamish, 1997). Generally, these forms of market-based resources are both firm-specific and location in nature (Pan and Chi, 1999). As a result of its firm-specificity, the resources contributed by the local partner to the IJV becomes an important factor of IJV success (Kim et al. 2011). Market-based resources as defined by Griffith and Harvey (2001) refers to knowledge acquired from the collaboration of a firm with external local entities, including channel members, partners, relationship with customers and government agencies. These resources are often complementary to the resources from foreign partners, which tend to be in the form of capital, brands and technology (exposure and experience) (Kim et al. 2011). Local partners have a greater motivation to exercise much control given their limited local demand.

#### ***2.4.2 Transaction Cost Economics Theory***

Transaction cost theory also gives answers of why IJV control is required. It proposes that there are three characteristics of economic transactions that determines transactions costs, which includes; asset specificity, transaction frequency, and uncertainty. Asset specificity and environmental uncertainty is the leading means of transaction hazards, which needs to be controlled in order to achieve better IJV performance (Li, 2012). As a result of incomplete contract of ICJV arrangement due to uncertainties in the local markets, foreign partners expect its local

partner to overcome uncertainties associated with incompleteness of the local markets to maximize opportunities and minimize risks. In the developing countries, the construction industry is seen as a complex environment due to high uncertainties, which certainly adds costs to business transaction. Since local firms has the knowledge in the local business culture and possess much knowledge in the local market which serves them much power to exercise much control in the IJV. Local partners are able to set up regulations to obtain appropriate, probable and critical information on the ICJV operations in order to protect their own interests.

## **2.5 PERFORMANCE ASSESSMENT IN ICJVs**

Accompanied by the growing body of related benefits associated with IJVs is the high degree of instability (Nippa et al. 2007; Le and Jorma, 2009; Nguyen and Larimo, 2009), and poor performance. Results in several studies shows high estimated rate of about 30% to 70% IJV failure (Bamford et al. 2004). It is therefore not surprising that a large number of studies have focused on how to determine the existence of key explanatory factors of the joint venture performance, and even more into international case (Jusoh et al. 2008; Ozorhon et al. 2008; 2010; Buhovac and; Killing, 2012; Christffersen et al. 2014; Larimo et al. 2016). Despite the considerable body of literature on IJVs performance, the core concepts particularly related to IJVs performance is still questionable (Özgen, 2007; Larimo et al. 2016), and cannot be applied across organizations (Schmid and Kretschmer, 2010). Özgen (2007) put forward that, the difficulty in evaluating the success of IJV is stem by the misunderstanding connected with the definition of performance and how performance should be measured. Yadav and Sagar (2013) emphasize that research concerned with models of performance measurement is limited and this has come to be the main challenge for organizations. Correspondently, the subject is more convoluted because there are contradictory



opinions on how to measure the performance of IJVs and there is comparatively partial evenness in IJV performance measurement definitions (Larimo et al. 2016).

It is extensively agreed in literature that IJV performance is a multivariate construct that cannot be represented by a single indicator, therefore it is unbearable to have a universal definition (Mohr, 2004; Ozorhon et al. 2010). Evaluating the success of IJVs in construction is more challenging than in other industries because of the multifaceted nature of IJVs that involves at least two partner organizations, and this is even worse when the IJV is a hybrid nature. Ozorhon et al. (2010) emphasized that, all dimensions of an IJV in construction should be taken into consideration in order to achieve a complete measure of performance. In addition to examining the functions and aims associated with the components comprising an IJV, selection of the type of performance measure is critical. The establishment of international joint ventures is based on a number of different reasons in a variety of circumstances (Acquaah, 2009). Accordingly, Child and Yan (2003) revealed that there exists some relationship between an IJV performance evaluation and objectives under which an IJV is formed. They however stressed that the JV partners may have different objectives as well as conflicting agendas, which in turn suggests that different performance criteria may be used by each partner. The situation becomes more complicated when the different perspectives on performance and the diversity of performance measures are examined simultaneously (Ozorhon et al. 2010; Larimo et al. 2016). While in many cases the partners may share common objectives and use similar performance measures, in many other cases each partner may employ different sets of performance criteria based on their idiosyncratic perspective (Yan and Luo, 2016).

Generally, from the viewpoint of managers and results in previous studies performance measurement is categorized into two main groups. They are financial and non-financial measures.



The financial measures of performance are reliant on traditional indicators like profitability, growth and cost information which are short-term in nature (Jusoh et al. 2008). Non-financial measures are used to capture different aspects of the performance of the firm like management related, strategic related and learning related (Larimo et al. 2016). Thus, they are quantitative measures of either an individual or an entities performance that are not expressed in monetary terms. They are used to evaluate non-financial aspects of the firm and include client satisfaction, attainment of strategic objectives, market share, efficiency and productivity. Another stream of research also advocates that performance measurement can be seen as either subjective (perceptual) or objective measures (Julian, 2005), or a combination (Ozorhon et al. 2008). Subjective measures include partners' satisfaction, perceived financial performance, the overall JV satisfaction, partner relationship, market position, JV's returns from the Client, parent firm's returns from JV. Objective measures on the other hand are based on independent data that can be obtained from third parties (Mohamed, 2003). They include longevity, survival, profitability, and stability. Most financial measures turnout to be objective. Studies by Larimo et al. (2016) throws more light on these measures of performance in international construction joint venture.

### **2.5.1 Issues concerning the evaluation of ICJV performance**

The subject of performance measurement in ICJV has been comprehensively debated in academia (Almohsen and Ruwanpura, 2016). A number of studies have focused on this topic from diverse perspectives and its contribution to organizations (Beamish and Lupton, 2009; Ozorhon et al. 2008; 2010). Both academicians and managers tend to mix performance indicators and determinants according to their own viewpoints of what works. However, the extent of arguments about the difficulties in measuring the performance of ICJV is at the increasing stride. Three main difficulties exist in evaluating the performance of ICJVs. The first one has to do with the

perspective from which performance should be assessed, is it to be directed towards either the performance of the project itself, the ICJV partners or towards the performance of the of the ICJV organization. The next difficulty involves whether to use objective and/or subjective measures, which another stream of research also mentions financial and non-financial measures as performance indicators. The last difficulty lies in a complete and identification and valid list of determinants of performance as well as to define the relationships between these determinants. Ozorhon et al. (2010) emphasized that adequate combination of these performance assessment criteria allows assessing the multidimensionality of performance. Studies that focuses on performance measurement and management in construction propose frameworks that measures either project, the partners or company performance (e.g., Kagioglou et al. 2001; Chan et al. 2004). Consequently, other studies also propose diverse performance measures for IJV in construction (e.g., Luo 2001; Mohamed, 2003; Silars and Kangari, 2004; Ozorhon et al. 2010), nonetheless there is no complete definition yet. The performance assessment in ICJV is complex and requires a structured, systematic, and an all-inclusive approach. Some key earlier studies that focuses on diverse perspective of performance measurement in IJVs are summarized in Table 2.1.

**Table 2.1 Selected empirical studies related to IJV performance measurement**

Author(s)	Contextual factors and data collection	Findings
Larimo et al. (2016)	Nordic firms' evaluation of their IJVs with those operating Asia, Europe and America A survey of 89 IJVs established by Nordic firms	Utilizing either financial and/or non-financial measure, firms chooses performance measures depending on the stage of the unit of the IJV lifecycle.
Ghuari et al. (2013)	Perspective of foreign firms on the evaluation of their IJVs located in South Korea A survey of 127 IJVs	Diverse effects upon performance measures through the use of either personnel or policy measures. The use of personnel shows a positive or direct relationship with satisfaction levels of IJV performance, whereas policy measures show significant relationships to both financial and growth measurement.
Lin and Ho (2012)	Taiwan firms' evaluation of their ICJV with other Western and Japanese firms, and the effect of governance structure strategies on performance. A survey of 48 ICJV	Client satisfaction was the major proxy for performance in international construction joint venture. Client satisfaction is closely related to the intangible organizational reputation, which is found to the most significant element in explaining organizational performance.
Ozorhon et al. (2011)	Proposed a model to assess the IJV performance in construction. A survey of 68 questionnaires and interviews with 28 Turkish firms in	A conceptual model was proposed, where the overall performance has four dimensions, namely project performance, partner performance, performance of the ICJV management, and perceived satisfaction with the ICJV. All the proposed indicators are valid measure of ICJV

	partnership with U.K., the United States, Germany, Japan, France, Canada, and Algerian construction companies.	performance and they correspond to different dimension of performance.
Chong (2009)	Perspective of US firms on the evaluation of their IJV performance in China Interviews with five US partnering firms	The use of different performance indicators (internal and external indicators) by foreign and local partnering firms. However, there is no consistency in the weighting of the choices of the indicators.
Lu (2008)	Evaluation of Sino-Japanese JVs in China from the perspective of both parent firms and general managers. A survey of 76 Sino-Japanese JVs	The evaluation of performance was based on four approaches: economic, strategic, behavioral and learning. There is positive correlation between these four approaches. However, there are differences between Japanese parent firms and IJV general managers using the approach of learning in the evaluation of their performance.
Mohamed (2003)	UK firms' evaluation of their ICJV with Australian contracting organizations. A survey of 48 questionnaires were utilized	The dependent construct representing performance was measured by three items, namely, (1) <i>Value</i> (this reflects the overall benefits derived from the business), (2) <i>Profit</i> (reflecting project-based tangible gains), and (3) <i>Satisfaction</i> (reflecting the organization's willingness, given the opportunity, to have a continued relationship with the local partner beyond the project under investigation).

## 2.6 PERFORMANCE INDICATORS OF ICJVs

Performance assessment of any collaborative arrangement is strongly contingent on the objective under which the partnership is formed (Ozorhon et al. 2010). However, in international construction joint venture, with the conflicting agendas of partners' objectives, and given its complexity and multidimensional characteristics, the validity of the possible measures for international construction joint venture performance is still uncovered. This has been the difficulty of identifying variables associated with ICJV performance (Luo, 2001). Within the construction industry setting, numerous measures to assess IJV have been documented with no consensus achieved so far from existing literature (Hong, 2014). Notwithstanding, ICJV performance assessment should be approached with care, bearing in mind the objectives of forming the venture. One of the basic management activities that provides a vision of where the organization wants to be in the short and long-term future is through strategy development (Özgen, 2007). It is well captured in the studies of Kagioglou et al. (2001) that, any performance management system will need to have strategy as the main input, in order that any results coming out of the system could be employed to assess the extent to which the organization has met its strategic goals.

Regardless of a number of key performance indicators for ICJVs (Luo, 2001; Mohamed, 2003; Lu 2008; Chong, 2009), Ozorhon et al. (2010) emphasized that adequate combination of these performance assessment criteria allows assessing the multidimensionality of performance. A conceptual model proposed by Ozorhon et al. (2011) revealed four dimensions of overall performance which are; project performance, partner performance, performance of the ICJV management, and perceived satisfaction with the ICJV. According to Özgen (2007), “project performance” is an objective indicator that measures the extent to which the project objectives are realized in relation to schedule, cost, quality as well as the satisfaction of client; “partner



performance”, is a subjective indicator that measures the extent to which an ICJV partner’s predetermined objectives are realized; “performance of the ICJV management” is also a subjective indicator that measures the success of management control over the ICJV as perceived by an ICJV partner. Lastly, “perceived satisfaction with the ICJV” is also a subjective indicator that measures the performance of the ICJV as perceived by an ICJV partner. Each type of performance measurement criteria has its own advantage and drawbacks (Ozorhon et al. 2010).

### **2.6.1 Project Performance**

Though some companies may combine forces with the same partner in several projects, however, IJV in the construction industry are well thought-out to be project-based instead of a long-term or continuous collaboration (Ozorhon et al. 2010). Thus, the operational success of a JV in the construction industry can be defined in terms of project success. Sillars and Karagari (2004) adopted the construct of organizational returns (profitability), which is further measured by JV return, and company growth (market position change) to assess the organization success in the practice of project-based JVs. Mcleod and MacDoneel (2012) suggested that, project success don’t necessarily capture the conventional criteria of measuring project performance but may extend further to capture more strategic objectives and benefits, like effects on markets and competitors, business development or expansion, and ability to react to future opportunities or challenges. In consideration of the fact that project success is considered an intangible feeling that varies with diverse management expectations, among persons, and with project phases, different ICJV partners may have different project objectives and perceived performance criteria to measure the success of ICJV projects. However, most frequently cited project goals are related to time, budget, and functionality/quality considerations (Ozorhon et al. 2011) as well as satisfaction of the client. Project performance is defined as objective measure of the extent to which the predefined project



objectives are realized (Özgen, 2007; Ozorhon et al. 2011). This study focusses on the extent to which project targets like completion of the project on schedule, within budgeted cost, in good quality, good safety performance as well as with maximum client satisfaction has been achieved.

### **2.6.2 Partner Performance**

With partners having differing objectives and conflicting agendas, it directly points to fact that ICJV performance assessment is directly related to the ICJV partner (Child and Yan, 2003). Besides the traditional objective of the local partner fulfilling financial or operational objectives, local partnering firms combine forces with foreign firms in an ICJV for a number of additional motives, such as to enhance organizational learning and to improve the strategic positioning of the company (Ofori, 2012; Osabutey et al. 2014), to participate in overseas projects, to maintain an overseas presence particularly when the market is low in the home country, spreading of financial risk, bring in outside expertise, and access greater manpower from their partner (Görg and Greenaway, 2004; Anaman and Osei- Amponsah, 2007; Assibey-Mensah, 2009). Often times, government policy encourages IJVs to enable local partners tap into the knowledge and technology of foreign partners. Partner performance is a subjective measure that measures the extent to which the predetermined organizational objectives of the company are realized based on the project undertaken through an ICJV (Ozorhon et al. 2011). In this study, the key objective of the local partnering firms when forming an ICJV focusses on enhancing competitiveness, learning managerial and technical skills from the partner, reducing cost etc. since partner performance is subjective in nature it will be based on company policy, past history as well as gathered data.

### **2.6.3 Performance of the ICJV Management**

As project performance measures the success of the ICJV operation at the project level and partner performance at partner firm/company level, performance of the ICJV management measures the

success of the ICJV operation at the centralized ICJV level. Performance of the ICJV management can be defined by the effectiveness of control over the ICJV operation (Özgen, 2007; Ozorhon et al. 2011). In a narrowed perspective view, the current study relied on the notion of control defined by Geringer and Herbert (1989) as *“the process whereby one partner effects, to varying degrees, manner of acting and output of the partner, via the use of power, authority and an extensive range of bureaucratic, cultural and informal mechanisms.”* Since control is a multidimensional construct an extensive collection of definitions and measures are available to researchers, like those proposed by Yan and Gray (2001), Fryxell et al. (2002), Lee et al. (2011), Li, (2012), Li et al. (2013), and Huang et al. (2015). Yan and Gray (2001), put forward that control may be broken down into strategic, structural and operational. However, Huang et al. (2015) defined the scope of management control as centralization, formalization and socialization. Adequate control mechanisms may have several important functions (Huang et al. 2015), like increasing the transparency of partners’ behaviour; to achieve expected objectives and ensuring that the IJV can faithfully pursue strategies that conform to the interest of the parent companies (Pangarkar and Klein, 2004). Employing a similar approach, this study measures the performance of the ICJV management by the level of effectiveness of management control in terms of centralization, formalization and socialization, which in effect reflects the strategic control at board-of –directors level, operational control at general management level, as well as organizational control imposed by the local partner in forming the venture’s organizational structure, processes and operating routines.

#### **2.6.4 Perceived Satisfaction with the ICJV**

A partner’s satisfaction with the overall performance of the ICJV is one the most frequently adopted subjective measure of ICJV performance (Demirbag and Mirza, 2000; Choi and Beamish,

2004; Ozorhon et al. 2011; Ghuari et al. 2013). Subjective indicator based on partners' perceptions is their ability to provide information concerning the extent to which the ICJV has achieved its overall objectives (including financial, survival, or expansion objectives or any objective as the case may be) (Ozorhon et al. 2011). The perceived satisfaction of the ICJV partner with the ICJV is a subjective measure that will be utilized in this study as one of the performance indicators.

More importantly, to assessing the realized organizational and project objectives, a subjective indicator is carefully weighed to reflect firms' representative perception about the ICJVs (Özgen, 2007). He made emphasis that, the last indicator of an ICJV performance is overall satisfaction, and it defines the degree of satisfaction of the partnering firm with the JV and it provides the general idea about the success of the partnership beyond all financial and objective criteria. Table 2.2 provides these multidimensional performance indicators of ICJV.

**Table 2.2 Performance Indicators**

<b>Performance indicators/objectives</b>	<b>Focus</b>
<i>Project performance</i>	<i>Objective in nature</i>
Completing the project within schedule	
Completing the project within budgeted cost	
Achieving required project quality	
Satisfying the client requirement /expectations	
Good safety performance	
<i>Partner performance</i>	<i>Subjective</i>
Equitably sharing of risks	
Sharing resources (financial, human, equipment etc.)	
Costs reduction	
Learning management skills from your partner	
Achieving of technology transfer/learn technical skills from your partner	
Enabling internationalization (entering new markets)	

Increasing competitiveness (likelihood of getting the job)  
 Creating long-term relationships  
 Frequency of communication among partnering firms  
 Frequency of visiting the foreign partner headquarters  
 Frequency of being invited to join training activities hosted by partner firms headquarters

*Performance of ICJV management*

*Subjective*

Effectiveness of the strategic (upper management) control of the ICJV  
 Effectiveness of the operational (daily activities) control of the ICJV  
 Effectiveness of the organizational control of the ICJV

*Perceived satisfaction with the ICJV*

*Subjective*

Satisfaction of your firm with the ICJV

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Source: Ozorhon et al. (2011), Ofori, (2012), Osabutey et al. (2014), Demirbag and Mirza, (2000), Choi and Beamish, (2004), Ozorhon et al. (2011), Ghuari et al. (2013), and Huang et al. (2015)

## **2.7 HYPOTHESES DEVELOPMENT**

The issue of control (management) in construction is a broad spectrum of diverse activities, which requires functional or well-designed structures which performance can be decided on. As construction projects are one-off activity, project uniqueness, variability in the workforce, control of multitude subcontractors' etc. makes program of total control in construction difficult (Hendrickson and Au, 2000). Thus, partners to an ICJV should clearly define their control structures for better performances. Control within such an arrangement is extremely complex and multi-faceted, because additional dimensions are added instead of a single firm. This is reflected in Ghuari et al. (2013) study as the involvement of another firm together with its employees and requirements as well as the control available for use.

A variety of potential factors have been discussed in literature to influence the performance of IJV. Control exercise by partners over the IJV act as a significant determinant factor of performance (Yan and Child, 2004; Talman, 2009, Liu et al. 2014). Three dimensions of control proposed by Geringer and Herbert (1989) provided a useful understanding of control in IJVs. They are mechanisms, focus, and extent of control. Focusing on the mechanisms of control that has to do with the legal, physical or administrative steps that a partner use to provide more direction (Glaister et al. 2005), this study adopted three different types of control mechanisms (namely centralization, formalization and socialization) as our independent variable (Fryxell et al. 2002; Lee et al. 2011; Li, 2012; Li et al. 2013; Huang et al. 2015). A critical observation shows that, the dynamics of control solely do not speak of equity investment of the firms however, exercise through more strategic functions, that is managerial and operational processes (Barden et al. 2005). According to Luo (2007) individual corporate strategies are included and partner firms will employ diverse mechanisms of control to achieve their objectives.

Primarily, board-level decisions, company-wide protocols as well as directives implemented from managerial level are rooted under managerial control functions (Ghuari et al. 2013). Nonetheless, this is rooted in a control study by Yan and Gray (1994), to be exerted in three distinct ways, strategic decision-making, routine management of operation, as well as the corporate structure planning and the procedures for operating. There is a positive or direct relationship between the ownership levels based on investment level of a firm in IJV and the exercise of managerial control in directing the affairs of the IJV (Yan and Child, 2004). On the other hand, operational control is based upon the processes and performance-based activities, which affect daily and potentially more technical features within the IJV (Luo et al. 2001). Each partner company exercises with regards to the venture daily operations Operational control certainly does not require or relate to



majority ownership within the IJV, however, is based on more specific process area control to be managed and influence by the partners. It can clearly be deduced that; these control forms are both subject to the personnel involved or the practices or policies put in place, and this provides a different perspective on how these mechanisms can impact on performance (Ghuari et al. 2013).

Personnel controls focuses on the establishment of key members on board, or placed in positions from which they can exercise direct influence, both managerial and operational. The knowledge ability of the people plays an important role that is, both technical and environmental considerations within the venture operation country. Practices or policy controls relates more to the process or manner in which the venture is operated. It is employed in relation to specific institutional or regular strategies implemented by the local partner, and less dependent on the individual themselves. In the construction industry, support in policy and planning processes includes; Discussing human rights policies during project planning, support in making development plan for local communities, evaluating project feasibility considering environmental impacts, establishing codes of ethics for new projects, identifying H&S risks for employees during planning, identifying H&S risks to project users during design, disclosing social and environmental impacts of new projects, support in monitoring and reporting project sustainable performance, Reporting on construction progress and schedules, etc. As control is likely to vary across multiple perspective situations, it viewpoints to reason that the control exerted by the local partners helps to determine direction, focus, and overall operational goals and this should have a significant impact upon the performance of the ICJV. Based on the central argument, reflecting the impact of local partner control mechanisms on performance criteria, this study is grounded on *resource dependency* and *transaction cost economics theory* to establish the hypothesized relationship between the control mechanisms and performance criteria in ICJV.



### 2.7.1 Personnel controls

- *Top management positions staffing*

Concretely, it is widely agreed that, the most direct and persuasive positions are on the board of directors (Li et al. 2009; Reuer et al. 2014). According to Ghuari et al. (2013), through strategic, organizational and operational decisions, board of directors are able to provide directions and facilitate monitoring and coordination, which apparently determines the company's position. It is reflected in Reuer et al. (2014) study that, IJV acquires more gains when it delegates more authority to local management for international collaborations. Theoretically, research has long advocated that collaborative arrangements provide firms with a means to access, learn, and integrate partners' complementary knowledge and capabilities (Das and Teng, 2000). IJVs are often located in unpredictable host markets that are characterized by changes in host government policies and regulations, local supply conditions, client demand, and so forth. These conditions require decisions of the local partner to change policies and redeploy assets, for the timely fashion of such changes. In the case of the construction industry, the unpredictability of the local environment as well as cultural diversification of partners results in management difficulties (Hwang et al. 2017). Thus, relying on foreign management, which without the knowledge and experience of the local partner, stunt the project performance as well as the IJV management. Local partners located at the top management positions in construction decides on strategic or operations-related areas. The strategic-related areas focus on financial performance, business development, budgeting etc. while, operations-related focus on; construction progress, legal contracts and regulatory documents, construction schedules and cost estimates, performance reporting, scheduling and monitoring etc. Furthermore, under these conditions, granting greater authority and decision-making responsibilities to local management enhances the IJV's capabilities and satisfaction. With

respect to an IJV operating in developing countries, it is generally the local partner that helps their IJV succeed by providing market-based resources (MR) resources (country-specific knowledge, contact with regulatory authorities, and more importantly, management of the local workforce) (Inkpen and Beamish, 1997). With local personnel's occupying top management positions allows them to apply their own direction or goals upon the IJV. This leaves the guiding principles up to the local partner and this has a significant impact on the overall performance of the IJV. When top management positions are filled by foreign partners alone, to control and coordinate operations can slow decision making, lead to errors, and be costly (Brouthers, 2002). In the same vein, Reuer et al. (2014) postulated that, with the unpredictability of these changes makes it difficult for foreign partners to control and coordinate the venture since foreign partners occupying top management positions possess imperfect information concerning local conditions and obtaining this information can be costly. This high cost is shaped by the difficulties in ascertaining the organization performance, making performance attributions, and deciding on appropriate adjustments (e.g., in budgets, operations, personnel, etc.). Thus, exercising control by staffing top management positions by local partners is a significant concern in ICJV and this suggest the following hypothesis:

**H1.** *There is a positive relationship between a local partners' personnel located in top management positions and performance of ICJV management.*

**H2.** *There is a positive relationship between a local partners' personnel located in top management positions and project performance.*

**H3.** *There is a positive relationship between a local partners' personnel located in top management positions and perceived satisfaction with the ICJV.*

- *Location of local partners in key functional and operational areas*

This is one key area that does not certainly require or relate to majority ownership within the IJV, however, is based on more specific process area control to be managed and influence by the partners. Local partners with an in-depth knowledge and experience in operational process areas like project supervision (including management of the local workforce as well as the overall project in particular), reporting on construction progress and inspection report, and other related areas (Zhan et al. 2009), allows them to have control of these functions. To control these functions potentially lend itself towards a belief that the knowledge and expertise held by the local partner will prevent mistakes from occurring thereby streamlining processes in order to enhance the project performance. This provide the local partner to align its objectives and enable transfer of its cultural, policies and practices to its indigenous local firms and thus, create a positive spillover for the local personnel (Selekler-Gökşen and Uysal-Tezölmez, 2007). Performance increase in the task related is based on the fact that, knowledge base is a significant attribute and the hands-on expertise is readily available, it comes with smoother integration and transfer of knowledge between the firms in the IJV (Lyles and Salk, 1996). Thus, higher levels of involvement of the local partner in the routine or day-to-day operations of the ICJV activities probably accounts for increase in partner performance. As partners feel their presence in any activity in a collaborative relationship, they become more committed which leads to higher project performance (Cullen et al. 1995). More importantly, participation and involvement promote work motivation as well as increase partner satisfaction. Therefore:

**H4.** *There is a positive relationship between deployment of local partners in key functional and operational areas and perceived satisfaction with the ICJVs.*

**H5.** *There is a positive relationship between deployment of local partners in key functional and operational areas and project performance.*

**H6.** *There is a positive relationship between deployment of local partners in key functional and operational areas and partner performance.*

### **2.7.2 Policy controls**

- *Support in policy and planning process*

Local support in policy and planning process exhibits a strong link between the local partner and ICJV. It relies on the direct participation of the local partner in controlling the IJV (Ghuari et al. 2013). When local partners participate more in alliance decision making, they feel they are important contributors to the organization and gain a sense of achievement (Jun et al. 2001). Thus, this increase in support of policy and planning process sends a signal to the local partners about their status as insiders (Li, 2008), which then increases their job satisfaction as well as enhances the smooth operation of the alliance management. Support control mechanism is also very important when discussing the provision of specific local knowledge and expertise by the local partner. As firms are repositories of knowledge, local knowledge stands out as a major determinant of sustainable competitive advantage (Dimitratos et al. 2010). Thus, strengthening corporate competitiveness which enhance the overall performance of the IJV. For instance, many studies on knowledge transfer have shown strong correlation between the local partner's support in this area with a more potential for host country knowledge (Phan and Peridis, 2000). The local partner by providing support (intangible firm-specific resource, like management know-how) provides a direct link to the IJV to maneuver around pitfalls or implement better, more streamlined processes as well as prevent negative performance impacts. The application of prior knowledge and experience in the support role removes guesswork together with indecision faced the new venture

(Ghuari et al. 2013). Further, with prior experience and knowledge in the support role by the local partner, the venture can reduce transaction costs related to the “trial and error” behaviour in managing the ICJV. Therefore, if foreign partners are left to have total exclusive of policy and planning process, without experience and prior local knowledge, they tend to put more effort into monitoring the behaviour of partners to safeguard their interest (Pangarkar and Klein, 2004). Thus, this leads to an increase in costs of managing IJVs and lower IJV performance (Larimo and Nguyen, 2015). This engagement of the local partner in policy and planning will impact on both the perceived satisfaction with the ICJV and performance of ICJV management. Therefore:

**H7.** *There is a positive correlation between the local partner support in policy and planning processes and performance of the ICJV management.*

**H8.** *There is a positive correlation between the local partner support in policy and planning processes and perceived satisfaction with the ICJVs.*

- *Provision of learning opportunities*

The role of IJVs as an instrument of organizational learning, allows the development of a common understanding between the local partner and the IJV through set measures (Farrell et al. 2011). The resource-based perspective shows that, organizations are motivated to form IJVs for efficient development and deployment of firm resources. The differences in partner skills and knowledge provide the catalyst for learning (Inkpen, 2000). The local partner employs the training and learning mechanism through the placement of processes and norms as well as the interaction between its employees and the ICJVs. This increases the socialization between the two and enhances the implementation of knowledge and operational experience in the ICJV. Acquiring knowledge and its significance to an organization is considered simultaneously. Through the learning mechanism provided by the local partner, the foreign partner is able to achieve its learning

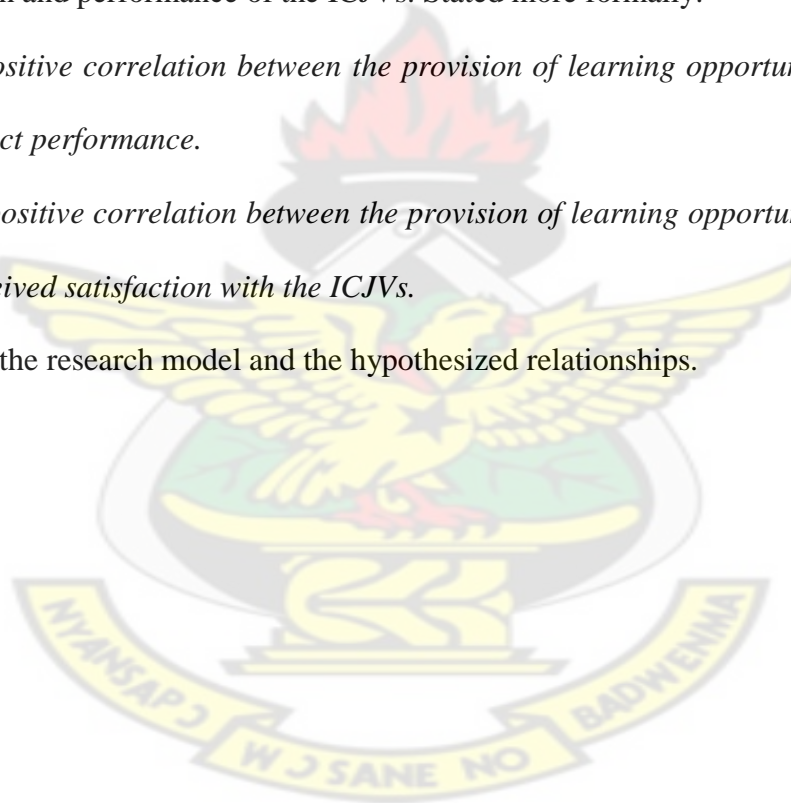


goals. These include: 1) knowledge of governmental issues; 2) knowledge of the market, and 3) knowledge of culture. This in a way foster cooperation for the smooth IJV management, which in turn improves project performance. Lack of the provision of these learning opportunities would equally propose that the ICJV would be left to the creation of its own norms and processes thus lessening its overall value and potentially creating gaps and flaws in the ICJV operations. Thus, providing policy-based learning opportunity programs will supply information to the employees of the ICJV enhancing the knowledge base and speeding the education. This in turn, enhances the overall satisfaction and performance of the ICJVs. Stated more formally:

**H9.** *There is a positive correlation between the provision of learning opportunities by the local partner and project performance.*

**H10.** *There is a positive correlation between the provision of learning opportunities by the local partner and perceived satisfaction with the ICJVs.*

Figure 2.3 shows the research model and the hypothesized relationships.





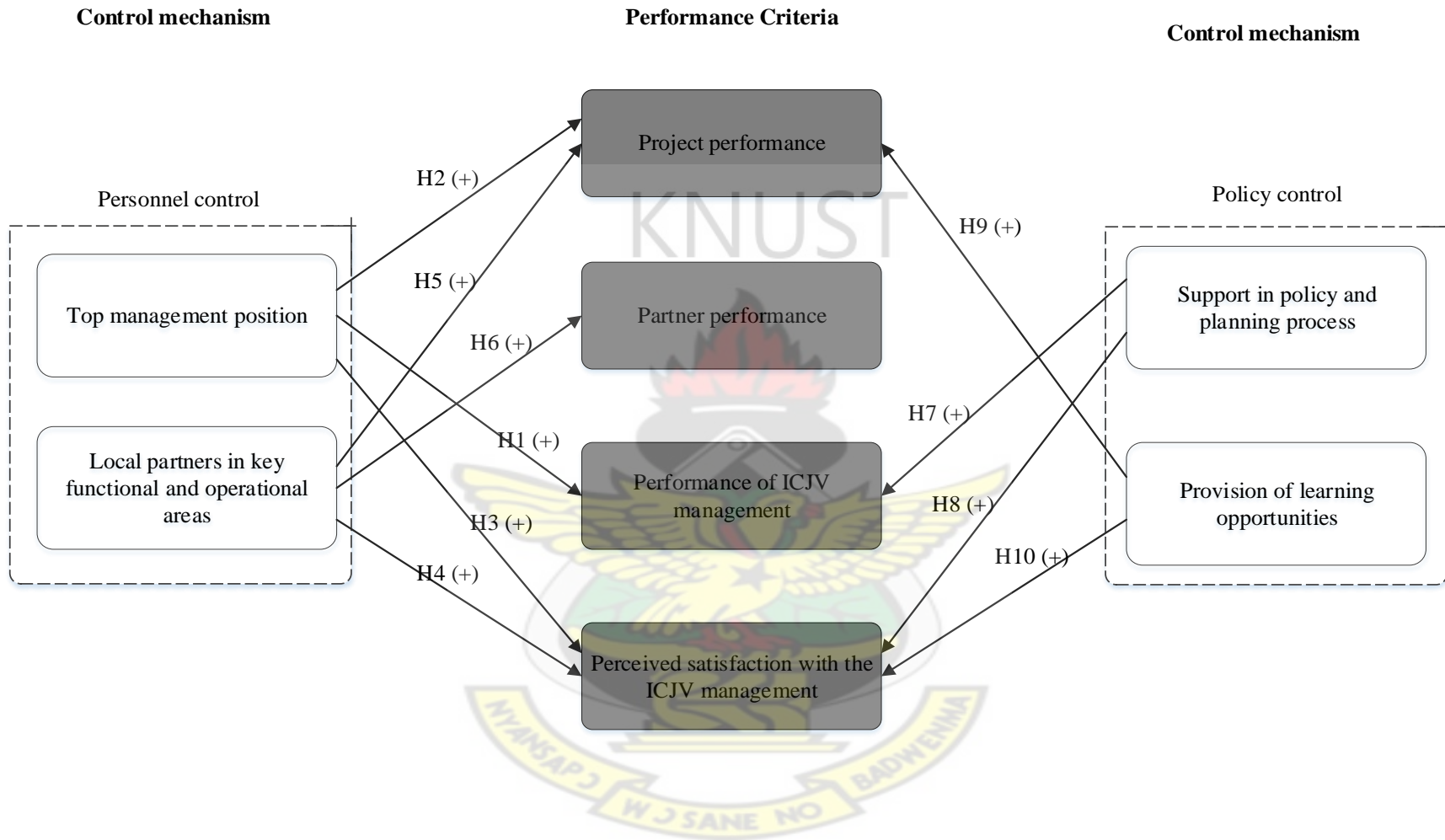


Figure 2.3 Research Model and Hypothesized Relationship

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

The methodological issues are discussed in this section. First and foremost, the systematic research methodologies pertinent to the construction management research is addressed in this chapter, and then followed by the research approach, the design, research strategy, research methods, source of data, questionnaire development through to how the study population sample was attained to achieve the three objectives of this study. Ethical issues considered and how the data was analyzed is addressed in this chapter.

##### **3.1.1 Research Methods for the Construction Management Discipline**

Issues concerning the appropriate research method to be employed in the Construction Management (CM) setting has received an extensive attention, with a considerable debate (Harty and Leiringer, 2017). The argument stems from the fact that, CM research is more of social science research in the sense that, the interpretative (qualitative) method should be employed rather the rationalism (quantitative) method (Hong et al. 2014). Ashworth (2009) indicated that the home of construction management research is within the sphere of engineering. CM research is more related to technical discipline and has been dominated by the “engineering paradigm” of knowledge creation (Langford, 2009). This is the application of scientific knowledge in an applied realm (Becher and Trowler, 2001), employing positivist and quantitative approaches (Fellows and Liu, 2015). Consequently, with the advancement of construction management scope and breadth, at the same time populated by researchers with enormously varying background who do not necessarily share similar views on ontological and epistemological stands concerning the methods they employ

and the outcome of their work (Schweber, 2015). This has given rise to a wide and heterogeneous body of knowledge grounded on findings from academic works conducted through plethora of methods based on different and competing theoretical underpinnings (Dainty 2007). For that reason, there is partially unevenness of CM research in terms of research should be carried out. According to Fellows and Liu, (2015), the adoption of a good research method for a particular research activity is reliant on the breadth and depth of the research.

### **3.2 RESEARCH APPROACH**

According to Saunders et al. (2009) the selection of an appropriate research approach is contingent on the research paradigm. In the same vein, Bryman and Bell (2015) postulated that, the fundamental rules of stands introduced by researchers, the research strategies employed as well as the method engaged in undertaking these strategies, describes the complete way in which research approach can be viewed. Research approach is categorized into three types and these are deductive, inductive and abductive approach (Saunders et al. 2012; Bryman and Bell, 2015). The focus of inductive approach is to create understanding from the data set gathered to ascertain relationships to develop a theory. According to Saunders et al. (2012), inductive reasoning is grounded on getting knowledge from past experience. According to Dudovskiy (2016) abductive in a way is similar to deductive and inductive approaches because it is applied to make logical inferences and construct theories. With the growing status in business studies, the use of abductive approach in practice is very challenging and for that reason, researchers normally stick to traditional deductive and inductive approaches.

However, the study employed deductive research approach because it tends to use extensive data that favors the use of quantitative method of analysis (Baxter and Jack, 2008). This approach is

more concerned with hypothesis development grounded theories already existing, and further testing the hypothesis based on a strategy (Wilson, 2014). The deductive approach is more generic and requires a considerable data (sufficient numerical size). Oppenheim (2003) emphasized that, survey instrument like questionnaires and statistical tests are more appropriate using deductive approach and key mechanism employed including sampling in its data gathering to generalize or draw conclusions. Further, this was accepted since variables were gotten from literature to examine the impact of control mechanisms on performance measures through quantitative empirical testing.

### **3.3 RESEARCH DESIGN**

Saunders et al. (2012) define research design as the overall process of providing solutions to the research questions, gathering and analyzing the data. Thus, it explains the overall plan of the research. According to Creswell (2013), research design can either be Descriptive Research Design or Correlational Research Design. The descriptive research is employed for the justification of current practices, make judgement and to develop theories. This also focuses on clarifying the existence of a correlation that exist between two or more aspects of a situation or phenomenon as well as predicting future occurrences.

This study employed correlational research design because it is generally incorporated into quantitative research methods, and effective in permitting us achieve the objectives of the research, description and prediction (Christensen et al. 2011). Correlational research design was used with hypotheses testing approaches to expand the understanding and give a full picture of the impact of different local partner control mechanisms on performance measures in international construction joint ventures (ICJVs) in Ghana. Also, it involves multiple variables that helps to improve the researcher's ability to make predictions.

### **3.4 RESEARCH STRATEGY**

Studies by Saunders et al. (2009) produce no clear distinction between the strategy and the design of research. However, they made emphasis that the choice of research strategy is basically directed by the questions and objective of the research as well as the philosophical considerations/underpinnings. In other words, it is the plan of providing mounting answers to the research questions listed for the study. In the same vein, Remenyi et al. (2000) added that, research strategy gives a whole path of study together with the manner by which study is directed. Saunders et al. (2009) and Yin (2015) made it clear that, there are big overlaps between the types of research strategies. Nonetheless, the contemplation would be to choose the appropriate strategy. Saunders et al. (2012) classified research strategy into seven (7) strategies. These are: experiment, case study, action research, survey, grounded theory, ethnography and archival research.

The research strategy adopted for the study is the survey due to its strong relation with the deductive logic (Saunders et al. 2009). Survey research allows the gathering of a large number of data from sizeable population in a high economical way. This is obtained by the usage of questionnaire administered to a sample, these data are standardized, allowing easy comparison (Saunders et al. 2012). Likert scale was used which is a popular method of gathering information for surveys. Further, the researcher gathered information from respondents through emails, and face to face method of data which is the case of a survey research strategy.

### **3.5 RESEARCH METHODS**

A sound and clear research method is important for undertaking a research. According to Fellows and Liu (2015) research methodology as the ethics and measures of coherent idea applied to a scientific investigation. The three-advance method of research are: quantitative,



triangulation/mixed and qualitative methods. According to Creswell (2009) qualitative research method is a means for investigating as well as understanding the meaning of groups or individuals assign to a social or human problem. Thus, this method is grounded in practical investigation and evidence. They are also framed as case studies and summaries rather than to show a group of numeric data.

Quantitative research method involves examining objectives theories through testing the correlations among variables (Creswell, 2009). Thus, it is a structured research approach. Further, phenomenon is measured and explained by employing statistical analysis. This method gathers information which can be examined numerically, and the results are generally presented by descriptive statistics, tables and graphs. In most cases, quantitative research methods are deductive, which is more theory development that requires rigorous analyses (Saunders et al. 2012). Purely quantitative research method was adopted for this study, to address the research questions. Quantitative research method was adopted because it employs statistical and mathematical techniques to collect data, analyze, and identify causal correlations among determined variables

An approach or inquiry combining or associating both qualitative and quantitative forms is the triangulation method.

### **3.6 SOURCE OF DATA**

A two-stage approach was adopted for this study; firstly, a critical review of germane literature was conducted to discover subjects on control, control mechanisms and performance measurement in IJVs through the use of academic and professional journal articles, books, and web-based resources. The information gathered from the literature review and the preliminary findings influence the development of the questionnaire survey. Dwelling on primary source of data, first-hand information was gathered from respondents.



### **3.7 ETHICAL CONSIDERATION**

The study looked into the impact of local partner control mechanisms on performance measurement in international construction joint ventures (ICJVs) in Ghana, which human participants (respondents) contributed to the study. Therefore, such ethical issues were considered. Issues like respondents' security and privacy (confidentiality, data protection and consent) were greatly considered in this study. A systematic questionnaire survey was drafted in a concise, simple, straightforward, short and clear manner to prevent conflicts. Control mechanisms and performance criteria used by local firms (local partners) were not made known to another participant. Thus, respondents were given assurance on the confidentiality of the views. More importantly, ample time were given to participant in order to prevent inaccuracies and errors.

### **3.8 QUESTIONNAIRE DEVELOPMENT**

Within the context of the building industry, the response rate to research on construction management is somewhat not encouraging (Xiao and Proverbs, 2002). Therefore, using questionnaire as a data collection tool must be prepared to be "respondents friendly" to maximize response rate. The development of the empirical questionnaire followed a two-stage approach.

#### **3.8.1 Pilot Study**

Piloting or pre-testing a questionnaire survey is very necessary in every study as it helps demonstrate the methodological rigor of a survey. With an extensive review of literature as a guide and the preliminary fact findings, a pilot survey was piloted to increase the practicality as well as suitability of the study for continuing with the development of the empirical questionnaire survey. A pilot survey form was sent to four (4) academic experts and five (5) local practitioners in the

Ghanaian construction industry who have acquired direct hands-on IJVs with foreign construction firms for their review and comments relating to how questions were framed, questions clarification as well as the suitability of the options offered (Hong, 2012). The pilot survey questionnaire was taken as the final empirical questionnaire for data collection since no adverse comments were received from the interviewee.

### **3.8.2 Empirical questionnaire survey**

Upon the acceptance of the pilot questionnaire survey, an empirical questionnaire survey was launched to ask for the experience-based perception of the key local members included in an ICJV project concerning the hands-on subjects about ICJV application. The structure of the questionnaire survey followed three (3) procedures suggested by Cohen et al. (2013) for a questionnaire flow, allowing respondents easy to read, understand and follow.

- 1) A brief description, outlining the focus of the survey was given at the start of the questionnaire;
- 2) Directions on how to answer questions under every section was briefly indicated;
- 3) A cone approach was employed to help the respondents to give answers systematically, by initially, asking them general questions (respondent's backgrounds and personal information), followed by more specific questions (objectives of the study).

Generally, the design of the questionnaire was in three (3) sections 'A', 'B', and 'C'

**Section 'A'** being the first part and requested for the demographics of respondents. Responses were utilized to testify if any of the variable under the section had an implication on the rating of the experience as well as expertise. In the construction industry, the experience-based of professional role, working level in the organization, number of ICJV projects involved in, the type of IJV

projects they belong to, etc. are well-known to be important signs of experience and expertise in construction.

**Section ‘B’** indicated the second section on the questionnaire focusing on the objectives of the study. Respondents were asked to identify the mechanisms through which control is exercise and the criticality of the control mechanisms on the overall performance of the ICJV. The rate of significance and criticality was assessed using a Likert scale of 1-7 where 1 = *not significant*; 2 = *least significant*; 3 = *fairly significant*; 4 = *moderate*; 5 = *significant*; 6 = *very significant*; 7 = *most significant* and 1 = *extremely low criticality*; 2 = *very low criticality*; 3 = *low criticality*; 4 = *moderately critical*; 5 = *critical*; 6 = *very critical*; 7 = *extremely critical* respectively. The use of the 7-points Likert scale was to give a broader explanation to the variables identified from literature. Moreover, seven-point scale was used in order to help respondents judge easily because people are accustomed to this scale when quantitatively evaluating a phenomenon and helps to understand the respondents’ opinions on the condition of the control mechanisms. These variables serve as the independent variable according to the study. **Table 3.1** below shows the control mechanisms.

**Table 3.1: List of Control Mechanisms**

<b>CODE</b>	<b>CONTROL MECHANISMS</b>
<b>PECM</b>	<b>PERSONNEL CONTROL MECHANISMS</b>
<b>PECM&gt;TMS</b>	<b>Top Management Staffing</b>
PECM>TMS 1	Establishment of corporate board members with local officials
PECM>TMS 2	Establishment of senior executive positions with local members (e.g. Project managers, Contractors, etc.)
<b>PECM&gt;KFOA</b>	<b>Key Functional and Operational Areas</b>
PECM>KFOA 1	Placement of local members in key functional areas (e.g. Engineers, Site supervisors, etc.)
PECM>KFOA 2	Deployment of local members in operational areas (e.g. labourers)
<b>POCM</b>	<b>POLICY CONTROL MECHANISMS</b>
<b>POCM&gt;SPPP</b>	<b>Support in policy and planning process</b>

POCM>SPPP 1	Discussing human rights policies during project planning
POCM>SPPP2	Support in making development plan for local communities
POCM>SPPP 3	Evaluating project feasibility considering environmental impacts
POCM>SPPP 4	Establishing codes of ethics for new projects
POCM>SPPP 5	Identifying H&S risks for employees during planning
POCM>SPPP 6	Identifying H&S risks to project users during design
POCM>SPPP 7	Disclosing social and environmental impacts of new projects
POCM>SPPP 8	Support in monitoring and reporting project sustainable performance
POCM>SPPP 9	Reporting on construction progress and schedules
POCM>SPPP 10	Laying down procedures and routines for the ICJV
POCM>SPPP 11	Support in supervisory role
POCM>SPPP 12	Planning and approval for capital budgeting and resource allocation
<b>POCM&gt;TLO</b>	<b>Training and learning opportunities</b>
POCM>TLO 1	Provision of knowledge of governmental issues to the partner
POCM>TLO 2	Provision of knowledge of the local market to the partner
POCM>TLO 3	Provision of knowledge of the local culture to the partner

**Section ‘C’** was the last part of the questionnaire that demanded respondents to rate the level of importance on some indicators of performance for ICJV and the extent of realization of the key performance criteria. The rate of importance and realization was assessed using a Likert scale of 1-7 where 1 = *not important*; 2 = *least important*; 3 = *fairly important*; 4 = *moderate*; 5 = *important*; 6 = *very important*; 7 = *most important* and 1 = *not achieved*; 2 = *least achieved*; 3 = *fairly achieved*; 4 = *moderate*; 5 = *achieved*; 6 = *highly achieved*; 7 = *most achieved* respectively. The performance measures were identified from literature thus adopted from Ozorhon et al. (2011), Ofori, (2012), Osabutey et al. (2014), Demirbag and Mirza, (2000), Choi and Beamish, (2004), Ozorhon et al. (2011), Ghuari et al. (2013), and Huang et al. (2015). **Table 3.2** below shows the list of performance indicators identified.

**Table 3.2: List of Performance Indicators**

<b>CODE</b>	<b>PERFORMANCE INDICATORS</b>
<b>PrP</b>	<b>PROJECT PERFORMANCE</b>
PrP 1	Good time performance of ICJV project (i.e. completing projects within schedule)
PrP 2	Good cost performance of ICJV project (i.e. completing projects within budget)
PrP 3	Achieving required project quality
PrP 4	Good safety performance
PrP 5	Satisfying the client requirement /expectations
<b>ParP</b>	<b>PARTNER PERFORMANCE</b>
ParP 1	Equitably sharing of risks
ParP 2	Sharing resources (financial, human, equipment etc.)
ParP 3	Costs reduction
ParP 4	Learning management skills from your partner
ParP 5	Achieving of technology transfer/learn technical skills form your partner
ParP 6	Enabling internationalization (entering new markets)
ParP 7	Increasing competitiveness (likelihood of getting the job)
ParP 8	Creating long-term relationships
ParP 9	Frequency of communication among partnering firms
ParP 10	Frequency of visiting the foreign partner headquarters
ParP 11	Frequency of being invited to join training activities hosted by partner firms headquarters
<b>PICJVM</b>	<b>PERFORMANCE OF ICJV MANAGEMENT</b>
PICJVM 1	Effectiveness of the strategic (upper management) control of the ICJV
PICJVM 2	Effectiveness of the operational (daily activities) control of the ICJV
PICJVM 3	Effectiveness of the organizational control of the ICJV
<b>PS</b>	<b>PERCEIVED SATISFACTION WITH THE ICJV</b>
PS 1	Satisfaction of your firm with the ICJV

In all, the questionnaire constituted a 6-page. The first page covers a summary information on the research topic, aim, appropriate time it takes to complete the questionnaire as well as the contact information of the researcher (see Appendix 1). With the initial usage of the pilot study, the estimated time to complete the questionnaire was 20 minutes.



### **3.9 STUDY POPULATION**

With the main focus of the study, establishing relationships between control mechanisms and performance measures employed by local firms (partners) in ICJVs with foreign firms in Ghana, the survey population comprise Ghanaian construction companies that had participated in ICJVs with foreign companies. A list of targeted respondents was drawn up from the records maintained by Ghana Investment Promotion Centre (GIPC). According to the GIPC records, a total of 166 projects were registered with JVs arrangement from January 2006 to December 2016. However, out of the 166 registered projects, 149 (89%) were construction related activities. This list served as the sampling framework.

#### **3.9.1 Sample Size Determination**

Using Partial Least Squares – Structural Equation Modelling (PLS-SEM) as a statistical tool to analyze the impact of control mechanisms on performance measures, Barclay et al. (1995) recommend that the minimum sample size should be equal to;

- 10 times the largest number of formative indicators applied to quantify a lone construct, or
- 10 times the largest number of structural paths directed at a specific construct in the structural model.

Using the second option (see, Fig 2.3), the construct with the maximum number of structural paths directing to it is “perceived satisfaction with the ICJV management” (four path). Thus, a least sample size of 40 was needed for this research, when adopting the widely “ten times rule” (see Barclay et al. 1995; Hair et al. 2016).

#### **3.9.2 Sampling Techniques and Data Collection**

The study generally followed the recommendation of Dillman (2007) to ensure a high response rate. Purposive sampling technique was used in selecting survey respondents. First and foremost, before the questionnaire distribution, the researcher contacted potential respondents through phone

calls or face-to-face meetings and explained the background of the study and importance of their participation. Further, those that the researcher couldn't locate directly, the questionnaire was sent to their respective mail addresses to elicit information pertaining to area under study and contingent on the objectives. The condition was that potential respondents should have acquired direct hands-on one or more ICJV projects with a foreign company (Hong, 2012). Local professionals (senior executives e.g. project managers, architects, engineers, quantity surveyors, etc.) were identified as valid respondents for this study. The focuses on these key informants is that, they are the top management decision-makers and have knowledge of the firm, familiarity with the environment of the firm, access to strategic information and knowledge on the performance of the organization (Zhou et al. 2010).

### **3.10 DATA ANALYSIS AND STATISTICAL TOOLS**

To ensure the consistency and completeness and readability, questionnaires retrieved from the respondents were arranged in a format that enabled easy analysis (i.e. all questionnaires were then coded to enhance easy identification and analysis). Data received were entered into the International Business Machines\_ Statistical Package for Social Sciences) IBM SPSS version 23. Mean Score Rankings, Normalization Analysis and Structural Equation Modelling were used to analyze the data.

#### **3.10.1 Structural Equation Model (SEM)**

SEM also known as causal modeling or analysis is multivariate statistical technique used to examine direct and indirect relationships between one or more independent variables and one or more dependent variables either continuous or discrete. It can also be described as an acquiescent technique for assessing varying interrelations among variables, namely, direct ( $A \rightarrow B$ ), indirect

( $A \rightarrow C \rightarrow B$ ), and interactive ( $A \rightarrow C \rightarrow B$  and  $D \rightarrow C \rightarrow E$ ) relationships and at the same time to confirm the underlying structure among observed and latent factors (Hair et al. 2006; Byrne 2006; Ullman 2006). There are two types of SEM-based methods, the partial least square-SEM (PLS-SEM) approach and covariance-based SEM (CB-SEM) approach. This study employed PLS-SEM because key driving constructs can be identified (Hair et al. 2011), can take care of nonnormal data sets (Ringle et al. 2012) and required minimum sample size, however without compromising the high level of statistical power (Reinartz et al. 2009). Equally, PLS-SEM is a distribution-free soft modeling approach, suited for applications without making strong assumption, which other models cannot be compared to (Hair et al. 2011).

The results from the PLS-SEM model requires two-step interpretation, validity and reliability testing as well as assessment of the relationships established on the path coefficients. The validity and reliability of the measurement model will first be evaluated by examining the individual loadings of the latent factors for internal composite reliability and discriminant validity (Chin, 1998). After making adjustments to the items in the model and acceptance of the final model, the relationships between the independent latent variables and the dependent variables will be assessed based on standardized beta estimates as the path coefficients. These path coefficients will then be used to prove or disprove the hypotheses in the research (Aibinu and Al-Lawati, 20010).

### **3.10.2 Assessment of the Measurement Model**

The assessment of the constructs (i.e. reliability and validity of the measurement), involves determining indicator reliability, internal consistency, convergent validity, and discriminant validity as described by Hair et al. (2012). Internal consistency was evidenced by the estimate composite reliability and Cronbach alphas. A recommended criterion of 0.70 by Nunnally (1978) is well known measure to assess a scale's reliability with respect to internal consistency. Cronbach

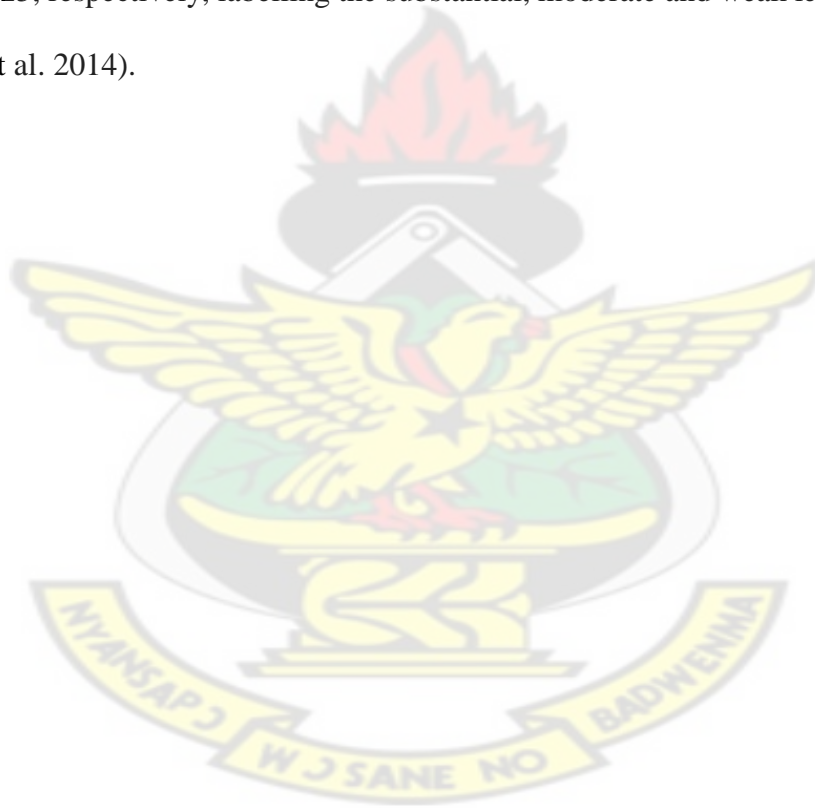
alpha ranged from 0 (no reliability) to 1 (perfect reliability) and the generally agreed upon lower limit was 0.7. convergent validity measures the extent to which the items underlying a particular construct actually refer to the same conceptual variable. Thus, it ensures the appropriateness of the variables measuring the respective latent factors (Hair et al. 2012). In determining the convergent validity of a factor model in PLS- SEM, the commonly used test are Cronbach's alpha, composite factor reliability, and average variance extracted (AVE) (Fornell and Larcker, 1981). For composite factor reliability (CFR), Nunnally (1978) recommended a cut-off value of 0.7. As for AVE, Fornell and Larcker (1981) suggested a score of 0.5 as an acceptable level.

According to Hair et al. (2013) discriminant validity shows the extent to which two conceptually similar concepts are distinct. With the discriminant validity, the underlying principle is that items should be strongly correlated to measure the corresponding construct with theoretical support and less correlate with other constructs. High discriminant validity provides a greater evidence that a construct is sufficiently unique and capture the phenomenon that another construct cannot. Therefore, in the process of assessing or testing the discriminant validity in the structural construct a comparison was achieved between correlations of the latent variables and the square root of AVE. Fornell and Larcker, (1981) recommended that, the AVE of a latent factor should be greater than the variance shared between the latent factor being considered and the other latent factors, which is good indicator of more variances being shared between the latent factor and its measurement variables. Hence, the rule is that the square root of the AVE of each latent variable should be larger than the correlation of two latent variables (Barroso et al. 2005).

### **3.10.3 Structural Model Evaluation**

After the establishment of confidence in the measurement model, a structural equation model was established and tested to examine the direction of assumed relationships between the ten (10)

hypothesized latent constructs, as reflected by the arrows connecting them. The path analysis was used for assessing the model. In the path analysis, the path coefficients are used to describe the relationships between the dependent and independent constructs. It is grounded in theory that; the path coefficient values denote the strength of the correlations between exogenous (independent) and endogenous (dependent) constructs (Hair et al. 2014). PLS-SEM achieves its objectives through the examination of the  $R^2$  values for the dependent constructs. It ranges from 0 to 1, where 1 represents complete predictive accuracy, using the rule of thumb regarding an acceptable  $R^2$ , with 0.75, 0.50 and 0.25, respectively, labelling the substantial, moderate and weak levels of predictive accuracy (Hair et al. 2014).





## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND DISCUSSION**

#### **4.1 INTRODUCTION**

This chapter analyses the findings of this study, present the results and discusses the core research objectives. The first section describes the sample characteristics and descriptive statistics. The subsequent sections present results and discussion of the research findings. The last section concludes with a discussion of the results of all hypothesis.

##### **4.1.1 Sample Characteristics**

Using purposive sampling technique and distributing one (1) questionnaire per each firm, 83 completed questionnaires were returned for data analysis. All the eighty-three (83) completed questionnaire were considered valid for the analysis. A 100% response rate was gathered, due to the fact that the questionnaire administration was done purposively and expanded for a period of one month through face-to-face encounters where respondents spent at most 20 minutes on the survey, and further clarification was given upon request. Also, the questionnaire for this study was carefully worded using short and simple sentences. The analysis of the results is based on these number of questionnaires retrieved and consequently formed the bases of the findings of this research.

#### **4.2 DESCRIPTIVE STATISTICS (DEMOGRAPHIC DATA)**

The relevance of this section is to establish the reliability or otherwise and generate confidence in the data collected.

#### 4.2.1 Positions in the Firm

Among the respondents, 2.4% were project managers ( $N = 2$ ), 13.3% were architects ( $N = 11$ ), 16.9% were contractors ( $N = 14$ ), 31.3% were quantity surveyors ( $N = 26$ ) they formed majority of the respondents. 18.1% were site engineers ( $N = 15$ ), 2.4% were senior executives ( $N = 2$ ), whereas 15.7% were made up of others ( $N = 13$ ) which are in the category of (assistant project manager, assistant quantity surveyors and assistant site engineers). These subjects are identified as instrumental in the formulization of the initial ICJV team who are (senior managers and project managers) while, the others are operational staff who are employed in managing the day-to-day operation of the ICJVs. This makes them credible and reliable source of information which is needed for this study.

**Table 4.1 Professional Background of the Respondents**

Item	Frequency	Percent
		(%)
Project Manager	2	2.4
Architect	11	13.3
Contractor	14	16.9
Quantity Surveyor	26	31.3
Engineer	15	18.1
Senior Executive	2	2.4
Other(s)	13	15.7
Total	83	100.0

**Field survey, 2017**

#### 4.2.2 Working Experience in the Construction Industry

Approximately, 13.3% ( $N = 11$ ) showed that they have been in the construction industry for less than 5 years; another group of approximately 43.4% have varied experience of 5 to 10 years in the industry ( $N = 36$ ). 25.3% have also been in the industry for between 11 to 15 years ( $N = 21$ ) and 18.1% worked for over 16 years ( $N = 15$ ). Generally, almost all the respondents have construction

industry experience (i.e. more than 5 years) which is important in this case to give some degree of reliability to the data provided. The length of experience in the organization of operation is vital to contribute to relevant information on the mechanisms of control and performance criteria adopted in assessing the growth of their partnerships.

**Table 4.2 Working Experience of the Respondents in the Industry**

<b>Item</b>	<b>Frequency</b>	<b>Percent (%)</b>
Less than 5 years	11	13.3
5 - 10 years	36	43.4
11 - 15 years	21	25.3
16 - 20 years	15	18.1
Total	83	100.0

**Field survey, 2017**

#### **4.2.3 Working Level**

The survey respondents covered all those working at the project management level, senior management level as well as technical/site level. However, bulk of the respondents were at the project management level (i.e. 73.5%,  $N = 61$ ). This is an indication that, all the respondents are directly involved in the daily affairs of the IJV contracting relationships and were therefore perceived as appropriate, representative and valid for data analysis.

**Table 4.3: Working Level**

<b>Item</b>	<b>Frequency</b>	<b>Percent (%)</b>
Technical/Site level	8	9.6
Senior management level	14	16.9
Project management level	61	73.5
Total	83	100.0

**Field survey, 2017**

#### 4.2.4 Number of International Joint Venture Project(s) Involved

Employing purposive sampling means that, all the respondents have participated in one or more ICJV projects and thus possessed straight hands-on experience in ICJV projects with various levels of involvement in terms of the number ICJV projects. Among the respondents, 83.2% ( $N = 69$ ) (24.1+24.1+16.9+18.1) have been involved in 1 to 4 ICJV projects, 16.9% ( $N = 14$ ) had accumulated rich experience in ICJV projects (5 or more).

**Table 4.4: International Joint Venture Project(s) Involved**

Item	Frequency	Percent (%)
1	20	24.1
2	20	24.1
3	14	16.9
4	15	18.1
5 or more	14	16.9
Total	83	100.0

**Field survey, 2017**

#### 4.2.5 Area of Expertise

Respondent companies have expertise mainly on office buildings (34.9%,  $N = 46$ ), residential buildings 30.3% ( $N = 59$ ), school buildings 7.2% ( $N = 14$ ), drainage/sewage/water 16.4% ( $N = 32$ ), and the remaining 11.3% ( $N = 22$ ) fall in the category roadworks, bridge etc. It merits attention that one company may be involved in multiple types of construction business. Therefore, the number stated in the frequency column signifies the total number of work type but not the number of respondents.

**Table 4.5: Area of Expertise**

<b>Item</b>	<b>Frequency</b>	<b>Percent (%)</b>
Office building	68	34.9
Residential building	59	30.3
School building	14	7.2
Drainage/Sewage/Water	32	16.4
Other(s)	22	11.3
Total	195	100.0

**Field survey, 2017****4.2.6 Management Control within the ICJV**

Roughly, in 32 (38.6%) ICJVs, the management activities are split between the partners for which each partner has competence, in 24 of them, there is shared management for all activities, whereas in another 24 ICJVs formed between local firms and foreign firms, there is dominant management for all activities by local partners. The rest were dominantly controlled by foreign firms representing 3.6% ( $N = 3$ ). This is a clear indication that, the local firms in most of the IJV partnership exercise much control given their limited local demands.

**Table 4.6: Management Control within the ICJV**

<b>Item</b>	<b>Frequency</b>	<b>Percent (%)</b>
Shared management for all activities	24	28.9
Dominant management for all activities by our company	24	28.9
Dominant management for all activities by our partner	3	3.6
Split management of activities for which each partner has competence	32	38.6
Total	83	100.0

**Field survey, 2017**



#### 4.2.7 Type of Client

Client of 67 ICJVs (80.7%) were government, whereas the private organizations was the owner of 16 ICJVs (19.3%). This is an indication that, most of the established ICJVs under the notice of government are mainly governmental projects, and that are set out with legal rules and obligations for parties. Thus, management control structures are broadly spell out.

**Table 4.7: Type of Client**

Item	Percent	
	Frequency	(%)
Government	67	80.7
Private	16	19.3
Total	83	100.0

**Field survey, 2017**

#### 4.3 ANALYSIS OF THE CONTROL MECHANISMS USING PLS-SEM\_ *Consistent PLS algorithm*

A new measurement theory of control mechanism grounded on the literature review that includes four dimensions: top management staffing, key functional and operational areas, support in policy and planning process and training and learning opportunities was proposed. 19 observed indicators (variables) measuring the four dimensions were assessed to determine the adequacy of individual sets of measurement items in capturing their respective constructs. The contemporary validation approach (i.e. confirmatory factor analysis) was adopted to assess the adequacy of the four-underlying dimension encapsulating the 19 observed variables (i.e. to confirm the control mechanism groupings identified from literature) using SmartPLS 3.2 Software (Ringle et al. 2005). In the first phase of the analysis, the consistent PLS algorithm calculation was performed to correct the reflective constructs' correlations to make results consistent with a factor-model (Dijkstra,

2010; Dijkstra, 2014; Dijkstra and Henseler, 2015). In principle, the correction builds on Nunnally's (1978) well-known correction for attenuation formula. The initial basic setting setup was to connect all the Latent Variable (LVs) for the initial calculations, with the employment of factor weighting scheme. Also, consistent bootstrapping was performed to compute the standard errors, and thus, test the statistical significance of the measurement items.

#### **4.3.1 Initial Measurement Validation of Control Mechanism**

The initial measurement model of the control mechanism construct consists of 19 observed indicators (variables) named as TMS (as Top Management Staffing), TMS 1, TMS 2, KFOA (as Key Functional and Operational Areas), KFOA 1, KFOA 2, SPPP (Support in policy and planning process), SPPP 1, SPPP 2, SPPP 3, SPPP 4, SPPP 5, SPPP 6, SPPP 7, SPPP 8, SPPP 9, SPPP 10, SPPP 11, TLO (as Training and Learning Opportunities), TLO 1, TLO 2, and TLO 3. The structure of the measurement model is examined; quality criteria of the model is also assessed.

Table 4.8 and 4.9 illustrates the factor loadings for each reflective indicator within a construct and convergent and discriminant validity analysis respectively. First and foremost, factor loading of variables relating to the four constructs was assessed based on the cut-off point of 0.70 (Hair et al. 2014). Item "SPPP 1" "SPPP 3", SPPP 4", "SPPP 6" and "SPPP 7" (representing "*Discussing human rights policies during project planning*", "*Evaluating project feasibility considering environmental impacts*", "*Establishing codes of ethics for new projects*", "*Identifying H&S risks to project users during design*" and "*Disclosing social and environmental impacts of new projects*") are removed from the measure Support in policy and planning process (indicated as SPPP) for further analysis because the standardized factor loading are 0.335, 0.342, 0.153, 0.289 and 0.314 respectively, which fails to meet the cut-off point of 0.70. Though, other variables loaded between 0.50 to 0.70. However, that does not mean that it is bad, it shows a satisfactory or

significant loading (Kline, 1998). Variables with the minimum factor loadings were deleted first (i.e. close to 0.00) in that order. In the process of eliminating variables with low loadings in the first-order construct is called scale purification, to enhance the validity of the construct (Chin, 1998).

From table 4.9, all the AVE values for each construct were greater than 0.50 except for the construct SPPP. Thus, that means to achieve figures with satisfactory level, the model can be further improved. Furthermore, the Cronbach's alpha, and composite reliability all suggest that the structural parameters shows some significant level of reliability. In addition, no correlation between any two mechanism of control groupings exceeded the square root of their AVEs however each control mechanism received the highest loading on the corresponding grouping which provided the evidence of discriminant thus suggested that the four groupings are different.



**Table 4.8: Initial Factor Structure and Loadings of Control Mechanisms Observed Variables (Using SmartPLS 3.2 Software\_ Consistent PLS algorithm)**

Code	Label	Factor loadings			
		component			
		PCM	KFOA	POCM	TLO
		TMS		SPPP	
TMS 1	Establishment of corporate board members with local officials	0.934			
TMS 2	Establishment of senior executive positions with local members	0.825			
KFOA 1	Placement of local members in key functional areas		0.898		
KFOA 2	Deployment of local members in operational areas		0.877		
SPPP 1	<i>Discussing human rights policies during project planning*</i>			0.335	
SPPP 2	Support in making development plan for local communities			0.853	
SPPP 3	<i>Evaluating project feasibility considering environmental impacts*</i>			0.342	
SPPP 4	<i>Establishing codes of ethics for new projects</i>			0.153	
SPPP 5	Identifying H&S risks for employees during planning			0.875	
SPPP 6	<i>Identifying H&amp;S risks to project users during design*</i>			0.289	
SPPP 7	<i>Disclosing social and environmental impacts of new projects*</i>			0.314	
SPPP 8	Support in monitoring and reporting project sustainable performance			0.705	
SPPP 9	Reporting on construction progress and schedules			0.701	
SPPP 10	Laying down procedures and routines for the ICJV			0.894	
SPPP 11	Support in supervisory role			0.647	
SPPP 12	Planning and approval for capital budgeting and resource allocation			0.517	
TLO 1	Provision of knowledge of governmental issues to the partner				0.904

TLO 2	Provision of knowledge of the local market to the partner	0.769
TLO 3	Provision of knowledge of the local culture to the partner	0.826

**Table 4.9: Initial Quality Criteria and construct correlations of the Control Mechanisms (Using SmartPLS 3.2 Software\_ Consistent PLS algorithm)**

Factor	Quality Criteria			Correlation matrix <sup>b</sup>			
	AVE	Composite Reliability	Cronbach's Alpha	KFOA	SPPP	TMS	TLO
KFOA	0.584	0.736	0.730	<b>0.764</b>			
SPPP	<b>0.431</b>	0.886	0.885	0.332	<b>0.656</b>		
TMS	0.621	0.758	0.721	0.411	0.452	<b>0.788</b>	
TLO	0.558	0.789	0.781	0.168	0.241	0.313	<b>0.747</b>

Note: KFOA - Key Functional and Operational Areas, SPPP - Support in policy and planning process, TLO – Training and Learning Opportunities, TMS – Top Management Staffing, AVE – Average Variance Extracted.

<sup>b</sup>Bold values on the diagonal represents the square root of AVE



#### 4.3.2 Modified Measurement Validation of Control Mechanism

After modification of the initial reflective indicators or factor variables of control mechanisms, 14 out of the 19 variables exceeded the threshold, with loadings in the range from 0.677 to 0.934, demonstrating a satisfactory level of individual variable reliability (see Table 4.10). Further, the AVE, Cronbach's alpha and composite reliability all suggest that the construct parameter shows significant level of reliability. Also, it is shown that the square roots of the AVE (values on the diagonal of the correlation matrix in Table 4.11) are all greater than the absolute value of inter-construct correlations (off-diagonal values), suggesting that the constructs holds satisfactory discriminant validity.

Bootstrap validation was performed to compute the standard errors, and thus, test the statistical significance of the measurement items (loadings for the reflective construct). The number of bootstrap samples was 5,000, as recommended by Hair et al. (2011) while the number of cases was equal to the number of responses. The critical t-statistic/t-value for a two-tailed test was 1.96 (significance level = 0.05). From table 4.10, the t-value of the individual measurement items were all above 1.96 as recommended by Hair et al. (2011). This indicates a reliable and valid model. Figure 4.1. shows the final construct with their respective measurement items and factor loadings.

**Table 4.10: Final Factor Structure and Loadings of Control Mechanisms Observed Variables (Using SmartPLS Software 3.2\_ Consistent PLS algorithm)**

Code	Label	t-value	Factor loadings			
			component			
			PCM		POCM	
			TMS	KFOA	SPPP	TLO
1	Establishment of corporate board members with local officials	17.296	0.934			
2	Establishment of senior executive positions with local members	7.504	0.825			
3	Placement of local members in key functional areas	17.420		0.898		
4	Deployment of local members in operational areas	9.683		0.877		
6	Support in making development plan for local communities	25.988			0.846	
9	Identifying H&S risks for employees during planning	33.275			0.899	
12	Support in monitoring and reporting project sustainable performance	16.320			0.722	
13	Reporting on construction progress and schedules	13.976			0.770	
14	Laying down procedures and routines for the ICJV	45.134			0.902	
15	Support in supervisory role	12.738			0.677	
16	Planning and approval for capital budgeting and resource allocation	32.794			0.851	
17	Provision of knowledge of governmental issues to the partner	21.862				0.804
18	Provision of knowledge of the local market to the partner	13.240				0.769
19	Provision of knowledge of the local culture to the partner	16.986				0.826

\*Note: PCM – Personnel Control Mechanism, POCM – Policy Control Mechanism, TMS – Top Management Staffing, KFOA - Key Functional and Operational Areas, SPPP - Support in policy and planning process, TLO – Training and Learning Opportunities.

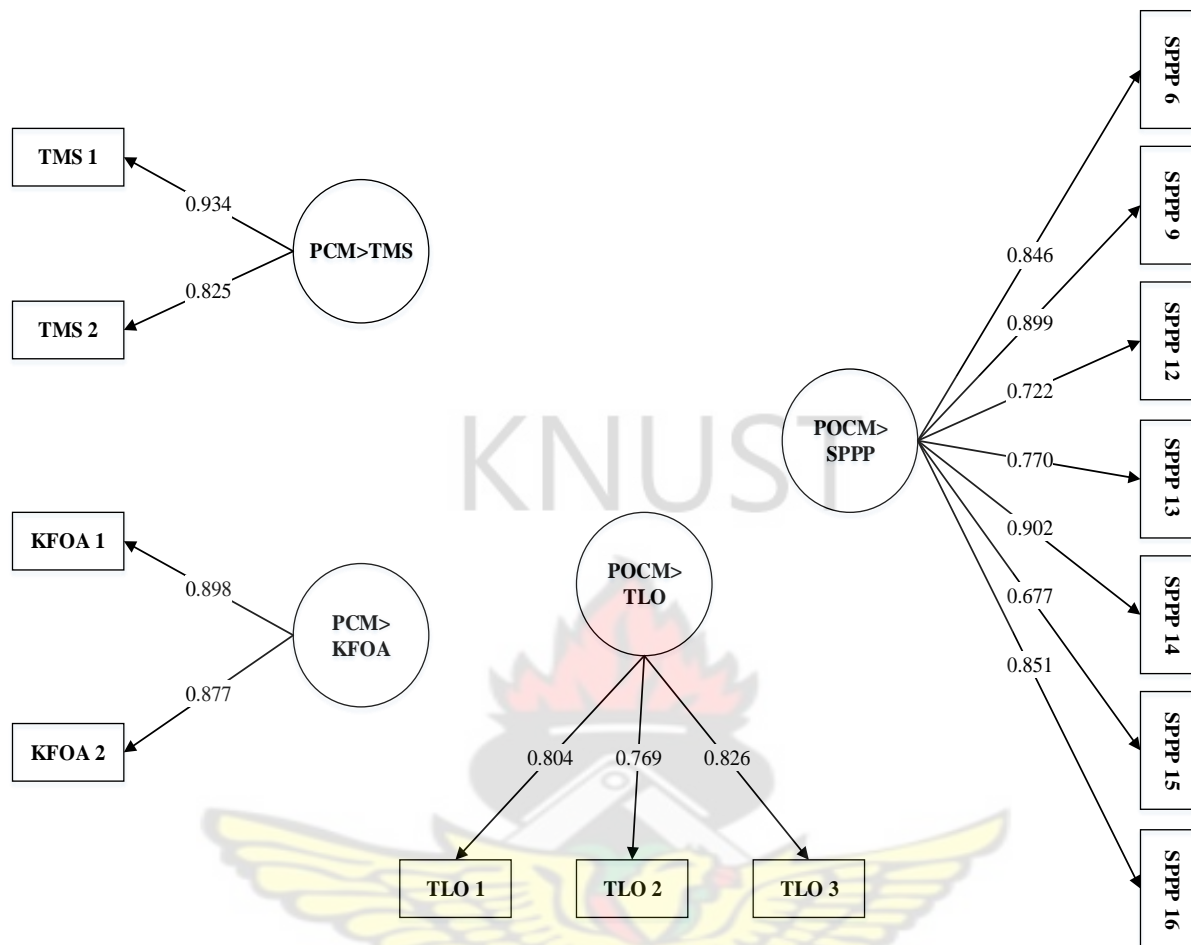
**Table 4.11: Final Quality Criteria and construct correlations of the Control Mechanisms**  
*(Using SmartPLS 3.2 Software\_ Consistent PLS algorithm)*

Quality Criteria				Correlation matrix <sup>b</sup>			
Factor	AVE	Composite Reliability	Cronbach's Alpha	KFOA	SPPP	TMS	TLO
KFOA	0.618	0.734	0.730	<b>0.786</b>			
SPPP	0.610	0.915	0.913	0.332	<b>0.781</b>		
TMS	0.581	0.756	0.721	0.411	0.452	<b>0.762</b>	
TLO	0.555	0.788	0.781	0.168	0.241	0.313	<b>0.745</b>

Note: KFOA - Key Functional and Operational Areas, SPPP - Support in policy and planning process, TLO – Training and Learning Opportunities, TMS – Top Management Staffing, AVE – Average Variance Extracted.

<sup>b</sup>Bold values on the diagonal represents the square root of AVE





**Figure 4.1: Factor loadings of relative Control Mechanisms**

Note

<b>TMS 1</b> - Establishment of corporate board members with local officials	<b>SPPP 9</b> - Identifying H&S risks for employees during planning	<b>SPPP 16</b> - Planning and approval for capital budgeting and resource allocation
<b>TMS 2</b> - Establishment of senior executive positions with local members (e.g. Project managers, Contractors, etc.)	<b>SPPP 12</b> - Support in monitoring and reporting project sustainable performance	<b>TLO 1</b> - Provision of knowledge of governmental issues to the partner
<b>KFOA 1</b> - Placement of local members in key functional areas (e.g. Engineers, Site supervisors, etc.)	<b>SPPP 13</b> - Reporting on construction progress and schedules	<b>TLO 2</b> - Provision of knowledge of the local market to the partner
<b>KFOA 2</b> - Deployment of local members in operational areas (e.g. labourers)	<b>SPPP 14</b> - Laying down procedures and routines for the ICJV	<b>TLO 3</b> - Provision of knowledge of the local culture to the partner

#### **4.3.3 Mean, Normalization and Standard Deviation of Control Mechanisms**

After employing factor analysis to confirm whether the underlying items under the relative four dimensions of control mechanisms are really measuring what they are supposed to measure (i.e. determine the adequacy of individual sets of measurement items in capturing their respective constructs), the means, and normalized value of all items was computed. This was to identify significant control mechanisms adopted by local partners in international construction joint ventures. Seven-point measurement scale was adopted to rate the level of significance of the control mechanisms of ICJVs (1 = not significant; 2 = least significant; 3 = fairly significant; 4 = moderate; 5 = significant; 6 = very significant; 7 = most significant). SPSS software was used to determine the mean of the factors. Afterwards, the normalized value was obtained by  $(\text{mean} - \text{minimum mean}) / (\text{maximum mean} - \text{minimum mean})$ . Xu et al. (2010) adopted this method to identify factors with normalized values equal to or greater than 0.50 as crucial factors.

From Table 4.12, personnel control mechanism was rated first with an average mean value of 5.95. Deployment of local partners in key functional and operational areas, and top management staffing accounted for the overall mean of the personnel control mechanism with a mean of 5.96 and 5.95 respectively. Among these mechanisms, deployment of local members in operational areas (i.e. as labourers) obtained the highest mean value (Mean = 6.22) with a satisfactory normalized value of 0.84. This was followed by establishment of senior executive positions with local members (i.e. project managers, contractors) having a mean and normalized value of 6.20 and 0.83 respectively. Given the limited local demands, local partners possess greater motivation to exercise much control through personnel control. Regardless of the fact that the partner holding much equity shares within

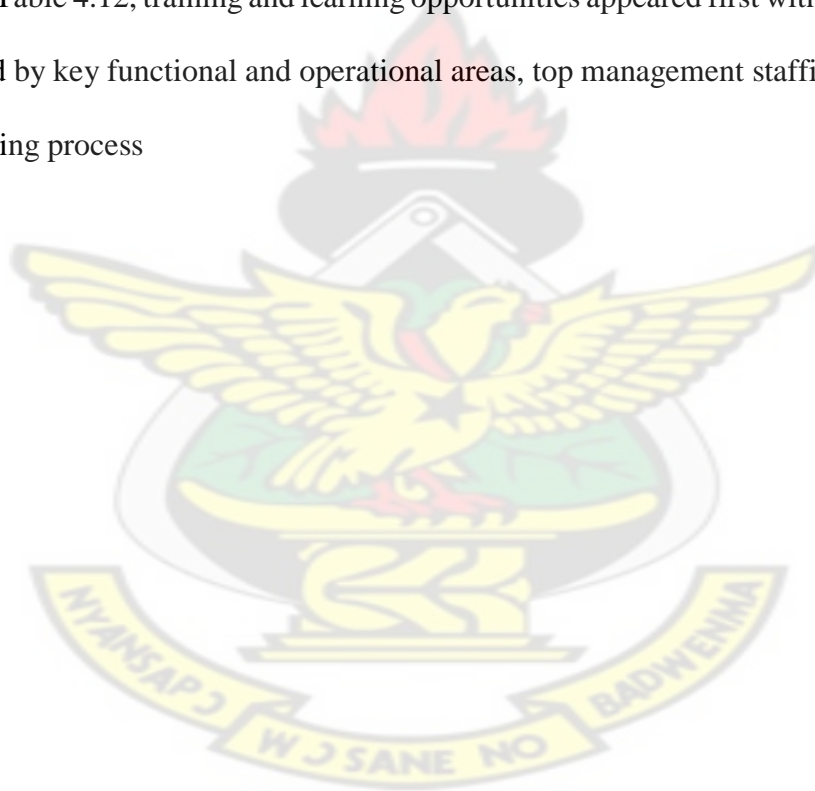


the venture have greater control over the ICJV (i.e. membership right on the ICJV board of directors, to determine key appointments, etc.), the Local Content and Local Participation, Regulation, 2013 L.I 2204, introduced in Ghana ensures that there is an immediate increase in the share of local employees. Therefore, the policy goes far in imposing a legal requirement on foreign firms in joint participation with local firms to actively recruit the local workforce in such a way as to create jobs or facilitate the transfer of valuable skills and knowledge from foreign labour to the local workforce. This is an indication that, with the provision of market-based resources (management of local workforce, channel members, government agencies) (Kim et al, 2011), local firms ensure greater majority of their members in strategic and operational areas which makes the level of control and influence more predictable.

Again, policy control mechanism obtained an average mean value of 5.89. Under the policy control mechanism, training and learning opportunities was rated high with a mean value of 6.14. This is followed by support in policy and planning process with a mean value of 5.64. Among these control mechanisms, provision of knowledge of governmental issues to the partner, local culture, and local market in that order obtained the highest mean and a significant normalized value greater than 0.50 and 0.60 respectively. From the table, under the support in policy and planning process, they all obtained a significant mean value of more than 0.50. However, based on the normalization analysis only three mechanisms of control were considered significant (i.e. reporting on construction progress and schedules, laying down procedures and routines for the ICJV and support in supervisory role). This is one key area that does not certainly require or relate to majority ownership within the IJV, however, is based on more specific process area control to be managed and influence by the partners (Ghuari et al. 2013). Local partners with an in-depth knowledge and experience in operational process areas like project supervision (including management of the local

workforce as well as the overall project in particular), reporting on construction progress and inspection report, and other related areas (Zhan et al. 2009), allows them to have control of these functions. To control these functions potentially lend itself towards a belief that the knowledge and expertise held by the local partner will prevent mistakes from occurring. Support control mechanism is also very important when discussing the provision of specific local knowledge and expertise by the local partner. As firms are repositories of knowledge, local knowledge stands out as a major determinant of sustainable competitive advantage (Dimitratos et al. 2010).

Generally, from Table 4.12, training and learning opportunities appeared first with an average mean of 6.14, followed by key functional and operational areas, top management staffing and support in policy and planning process



**Table 4.12: Mean, Normalization and Standard Deviation of Control Mechanism**

Code	Control Mechanisms	Factor Loadings	Mean Scores	Normalization*	Average Mean	Rank
<b>PCM</b>	<b>Personnel Control Mechanisms</b>				<b>5.95</b>	<b>1</b>
<b>PCM&gt;TMS</b>	<b>Top Management Staffing</b>					
TMS 1	Establishment of corporate board members with local officials	0.934	5.69	0.42		
TMS 2	Establishment of senior executive positions with local members	0.825	6.20	0.83	5.95	3 <sup>rd</sup>
<b>PCM&gt; KFOA</b>	<b>Key Functional and Operational Areas</b>					
KFOA 1	Placement of local members in key functional areas	0.898	5.70	0.43		
KFOA 2	Deployment of local members in operational areas	0.877	6.22	0.84	5.96	2 <sup>nd</sup>
<b>POCM</b>	<b>Policy Control Mechanisms</b>				<b>5.89</b>	<b>2</b>
<b>POCM&gt; SPPP</b>	<b>Support in policy and planning process</b>					
SPPP 6	Support in making development plan for local communities	0.846	5.45	0.23		
SPPP 9	Identifying H&S risks for employees during planning	0.899	5.21	0.04		
SPPP 12	Support in monitoring and reporting project sustainable performance	0.722	5.63	0.37		
SPPP 13	Reporting on construction progress and schedules	0.770	6.42	1.00		
SPPP 14	Laying down procedures and routines for the ICJV	0.902	5.91	0.59		
SPPP 15	Support in supervisory role	0.677	5.73	0.50		
SPPP 16	Planning and approval for capital budgeting and resource allocation	0.851	5.16	0.00	5.64	4 <sup>th</sup>
<b>POCM&gt; TLO</b>	<b>Training and learning opportunities</b>					
TLO 1	Provision of knowledge of governmental issues to the partner	0.904	6.26	0.87		
TLO 2	Provision of knowledge of the local market to the partner	0.769	5.95	0.63		
TLO 3	Provision of knowledge of the local culture to the partner	0.826	6.21	0.83	6.14	1 <sup>st</sup>

Note: \*Normalized value = (mean – minimum mean)/(maximum mean – minimum mean).

## **4.4 IDENTIFICATION OF PERFORMANCE MEASURES**

### **4.4.1 Mean, Normalization and Standard Deviation of Items Measuring Performance in International Construction Joint Ventures (ICJVs)**

In analyzing the criteria used by local partnering firms in assessing the performance of International Construction Joint Ventures (ICJVs) in Ghana, descriptive analysis like mean, normalization value and standard deviation were used. Table 4.13 displays the means, normalized value and standard deviations of all items. Among the 20 variables or items grouped under four constructs (i.e. project performance, partner performance, perceived satisfaction with the ICJV, performance of the ICJV management), all the items had a mean value over the mid-point (4.0) (Chen et al. 2010), which shows that respondents generally agreed with the performance metric variables. The Cronbach's alpha ( $\alpha$ ) coefficient for the weighting of the performance criteria were all larger than the recommended acceptable value of 0.7 (Nunnally, 1978). This indicates that the seven-point measurement scale adopted to rate the level of importance on the performance measures of ICJV (1 = not important; 2 = least important; 3 = fairly important; 4 = moderate; 5 = important; 6 = very important; 7 = most important) is internally consistent and reliable at the 5% significance level. More importantly, the normalized values (NV) of the mean scores were calculated to determine the significance or critical performance metric adopted by the local firms. Xu et al. (2010) adopted this method to identify factors with normalized values equal to or greater than 0.50 as critical factors. 14 (70%) of the factors had a normalized value above the threshold indicating how significance they are to the local partner.

#### **Project Performance**

From table 4.13, there is a clear indication that the five (5) general measures of project performance (from PrP1 to PrP5) were ranked among the fifteen (15) most important key performance measures

for ICJVs. This outcome indicates that project performance measures are key and integral to the performance measurement system for all types of construction projects from the perspective of construction firms (Wang and Huang, 2006; Chan and Chan, 2004; Hong, 2012). Thus, local partners in ICJV incorporate these general measures of performance as the benchmark of success in any partnership they venture into or in respect of project they undertake. Among the five factors under project performance, “good time performance of ICJV project (i.e. completing projects within schedule)” was ranked first with (mean = 6.25, S.D. = 0.922, NV = 1.00), this was followed by “good cost performance of ICJV project (i.e. completing projects within budget)” (mean = 6.06, S.D. = 0.786, NV = 0.87), “satisfying the client requirement /expectations” (mean = 6.01, S.D. = 0.904, Normalized value = 0.84), “good safety performance” (mean = 6.00, S.D. = 0.975, NV = 0.83), and “achieving required project quality” (mean = 5.81, S.D. = 1.006, NV = 0.70) as the last important measure of performance in ICJV projects. The local firms find this concept of project performance as the more predictive power of performance metric because, the problem of construction project execution everywhere has to do with cost, time, inefficient management and execution leading to poor quality, and failure in environmental and social indicators among others (Gyadu-Asiedu, 2009), which Ghana is not an exemption. Local managers therefore agree on the need to adopt project performance measure to ensure that performance targets are achieved.

### **Partner Performance**

This performance construct appeared fourth with an average mean of 5.40. However, factors measuring performance under this construct obtained a great statistically significant normalized value. Eleven factors were ranked under partner performance measure (ParP 1 to ParP 11), and out of the factors, five factors were considered more significant to the local partner with a mean and normalized value greater than or equal to 0.50 respectively.



**Table 4.13: Ranking of Key Performance Criteria in International Construction Joint Ventures (ICJVs)**

Code	Key Performance Criteria for ICJVs	All respondent group				
		Cronbach's Alpha	Mean	Normalization*	Std. Dev.	Rank
<b>PrP</b>	<b>Project Performance</b>	0.865				
PrP 1	Good time performance of ICJV project (i.e. completing projects within schedule)		6.25	1.00	0.922	<b>1</b>
PrP 2	Good cost performance of ICJV project (i.e. completing projects within budget)		6.06	0.87	0.786	<b>2</b>
PrP 3	Satisfying the client requirement /expectations		6.01	0.84	0.904	<b>3</b>
PrP 4	Good safety performance		6.00	0.83	0.975	<b>4</b>
PrP 5	Achieving required project quality		5.81	0.70	1.006	<b>5</b>
<b>ParP</b>	<b>Partner Performance</b>	0.830				
ParP 1	Creating long-term relationships		5.96	0.81	0.956	<b>1</b>
ParP 2	Increasing competitiveness (likelihood of getting the job)		5.83	0.72	1.167	<b>2</b>
ParP 3	Frequency of communication among partnering firms		5.16	0.27	.804	<b>9</b>
ParP 4	Sharing resources (financial, human, equipment etc.)		5.43	0.50	1.061	<b>5</b>
ParP 5	Enabling internationalization (entering new markets)		5.42	0.45	.952	<b>6</b>
ParP 6	Costs reduction		5.30	0.37	.959	<b>7</b>
ParP 7	Equitably sharing of risks		5.22	0.31	1.060	<b>8</b>
ParP 8	Achieving of technology transfer/learn technical skills from your partner		5.82	0.71	1.357	<b>3</b>
ParP 9	Learning management skills from your partner		5.71	0.64	1.504	<b>4</b>
ParP 10	Frequency of visiting the foreign partner headquarters		4.76	0.001	1.679	<b>10</b>
ParP 11	Frequency of being invited to join training activities hosted by partner firm headquarters		4.75	0.00	0.986	<b>11</b>
<b>PICJVM</b>	<b>Performance of ICJV Management</b>	0.854				
PICJVM 1	Effectiveness of the organizational control of the ICJV		5.90	0.77	0.919	<b>1</b>

PICJVM 2	Effectiveness of the operational (daily activities) control of the ICJV	5.55	0.53	0.720	<b>2</b>
PICJVM 3	Effectiveness of the strategic (upper management) control of the ICJV	5.49	0.50	1.040	<b>3</b>
<b>PS</b>	<b>Perceived Satisfaction with the ICJV</b>	0.721			
PS 1	Satisfaction of your firm with the ICJV	5.78	0.69	0.606	<b>1</b>

Note: \*Normalized value = (mean – minimum mean)/(maximum mean – minimum mean).



From Table 4.13, “creating long-term relationships” was ranked first (mean = 5.96, S.D. = 0.956, NV = 0.81), this was followed by “increasing competitiveness (likelihood of getting the job)” (mean = 5.83, S.D. = 1.167, NV = 0.72), “achieving of technology transfer/learn technical skills from your partner” (mean = 5.82, S.D. = 1.357, NV = 0.71), “learning management skills from your partner” (mean = 5.71, S.D. = 1.504, NV = 0.64), “sharing resources (financial, human, equipment etc.)” (mean = 5.43, S.D. = 1.061, NV = 0.50), “enabling internationalization (entering new markets)” (mean = 5.42, S.D. = 1.952, NV = 0.45), “costs reduction” (mean = 5.30, S.D. = 1.959, NV = 0.37), “equitably sharing of risks” (mean = 5.22, S.D. = 1.060, NV = 0.31), “frequency of communication among partnering firms” (mean = 5.16, S.D. = 0.804, NV = 0.27), “frequency of visiting the foreign partner headquarters and frequency of being invited to join training activities hosted by partner firms headquarters appeared the 10<sup>th</sup> and 11<sup>th</sup> with a mean value less than 0.50. Partner performance is a subjective measure that measures the extent to which the predetermined organizational objectives of the company are realized based on the project undertaken through an ICJV (Ozorhon et al. 2011). Local firms strongly participate in ICJVs, to maintain an overseas presence particularly when the market is low in the home country, spreading of financial risk, bring in outside expertise, and access greater manpower from their partner (Görg and Greenaway, 2004; Anaman and Osei-Amponsah, 2007; Assibey-Mensah, 2009). Generally, the observation implies that local partners involved in ICJV projects places much concern about the long-term strategic benefit reaped through the ICJV practices since the advancement in the JV management skills as well as improvement technology through the collaboration, provides a firm ground for the success of future ICJV projects and increase in competition respectively. Often times, government policy encourages IJVs to enable local partners tap into the knowledge and technology of foreign partners (Ofori, 2012; Osabutey et al. 2014).

### **Performance of the ICJV Management**

The effectiveness of local firms in exercising of control over every collaborative relationship they engage in, is placed as important measure. This measure was ranked third with an average mean of 5.65. With three underlying factors of performance measure which includes (effectiveness of the organizational control of the ICJV, effectiveness of the operational (daily activities) control of the ICJV and effectiveness of the strategic (upper management) control of the ICJV). “Effectiveness of the organizational control of the ICJV” was ranked first (mean = 5.90, S.D. = 0.919, NV = 0.77), followed by “effectiveness of the operational (daily activities) control of the ICJV” (mean = 5.55, S.D. = 0.720, NV = 0.53), and “effectiveness of the strategic (upper management) control of the ICJV” (mean = 5.49, S.D. = 1.040, NV = 0.50). From the strategic perspective view, local firms perceive this measure as integral to the process of IJV formation, operation as well as future collaboration. The issue of control (management) in construction is a broad spectrum of diverse activities, which requires functional or well-designed structures which performance can be decided on. With this performance measure viewed as a subjective indicator, local partners become more satisfied when they are granted greater authority in decision-making responsibilities with respect to the ICJV operations (Kim et al. 2011).

### **Perceived Satisfaction with the ICJV**

This performance measure was rated second with an average mean of 5.78 among the four construct of performance measures, with a single underlying variable i.e. satisfaction of your firm with the ICJV. “satisfaction of your firm the ICJV” obtained (mean = 5.78, S.D. = 0.606, NV = 0.69). From the strategic point of view, this subjective indicator concerns how the ICJV has achieved its overall objectives (including financial. survival, or expansion objectives or any objective as the case may be) (Ozorhon et al. 2011). However, from the perspective of the local partner, he is more concerned

with the level of involvement in the routine or day-to-day operations of the ICJV activities and this probably accounts for his satisfaction with the ICJV. According to Cullen et al. (1995) as partners felt their presence in any activity in a collaborative relationship they become more committed and satisfied with the operations.

#### **4.5 IMPACT OF CONTROL MECHANISMS UPON PERFORMANCE CRITERIA IN ICJVs**

In assessing the impact of local partner control mechanisms upon performance criteria, PLS-SEM was used. From literature, the author generated some observable relationships between four control mechanisms employed by local firms to control the activities of ICJVs with four distinct performance measures. Thus, the author was more concerned with predicting the relationships among the latent variables (i.e. independent variables – control mechanisms, and the dependent variable – performance measures). This was based on the strength and direction of relationships among the variables. Two stages are considered to form a network of constructs. First and foremost, the measurement model was assessed to determine construct unidimensionality, convergent validity and discriminant validity.

The second stage provides an assessment of the structural model that is developed. The structural model explains the relationships between predictor and predicted variable. It includes all the endogenous construct, both independent and dependent, path-coefficients and  $R^2$  values. Therefore, the path analysis was used for assessing the relationship between the control mechanism and the performance measures.



#### **4.5.1 Measurement Model Evaluation**

To assess the overall quality of the measurement model, the author tested the construct with all items loading on their respective latent factors and without any cross-loading among items. In all, 14 variables measuring four constructs of the control mechanisms (independent or exogenous variable), and 20 variables measuring four constructs of performance measures (dependent or endogenous variables) were examined (See Table 4.14, 4.15, and 4.16). Thus, 34 variables were subjected to reliability test. After the initial screening, 29 variables exceeded the threshold (factor loading of 0.70) as recommended by Fornel and Larcker (1998). Ranging from 0.701 to 1.000 indicating a satisfactory level of individual variable reliability (See Table 4.14). From Table 4.14, all the AVE were greater than 0.50, indicating that the model explained more than half of each construct. Also, the loadings of measurement items on its respective groupings exceeds the cross loadings. Cronbach's alpha values were equal to or greater than 0.700, showing that there is a greater internal consistency of the gathered data. Furthermore, the composite factor reliability test recorded values within the acceptable range which are equal to greater than 0.70. Thus, this is an indication that the structural parameters were reliable for the analysis. Also, it is shown that the square roots of the AVE (values on the diagonal of the correlation matrix in Table 4.15) are all greater than the absolute value of inter-construct correlations (off-diagonal values), suggesting that the constructs holds satisfactory discriminant validity.

From Table 4.14, the t-value of the individual measurement items were all above 1.96 as recommended by Hair et al. (2011). This indicates a reliable and valid model.

**Table 4.14: Measurement Model Evaluation**

Construct	Code	Factor loading	T-value/T-statistic	Average variance extracted	Composite reliability	Cronbach's Alpha
TMS	TMS 1	0.946	45.898	0.754	0.858	0.700
	TMS 2	0.782	9.178			
KFOA	KFOA 1	0.871	27.276	0.648	0.784	0.745
	KFOA 2	0.723	8.731			
SPPP	SPPP 1	0.702	13.960	0.578	0.905	0.877
	SPPP 2	0.754	16.379			
	SPPP 3	0.703	10.957			
	SPPP 4	0.819	28.943			
	SPPP 5	0.732	15.554			
	SPPP 6	0.828	22.503			
	SPPP 7	0.761	20.476			
TLO	TLO 1	0.901	50.874	0.713	0.832	0.702
	TLO 2	0.783	16.053			
PrP	PrP 1	0.707	8.507	0.626	0.891	0.849
	PrP 2	0.702	9.069			
	PrP 3	0.851	49.809			
	PrP 4	0.848	33.739			
	PrP 5	0.810	16.673			
ParP	ParP 1	0.703	10.947	0.576	0.904	0.875
	ParP 2	0.833	17.788			
	ParP 3	0.701	11.350			
	ParP 4	0.750	22.614			
	ParP 5	0.820	46.592			
	ParP 6	0.772	20.235			
	ParP 7	0.833	11.683			
PICJVM	PICJVM 1	0.871	59.976	0.671	0.858	0.756
	PICJVM 2	0.853	46.664			
	PICJVM 3	0.713	6.441			
PS	PS 1	1.000		1.000	1.000	1.000

Note: PCM – Personnel Control Mechanism, POCM – Policy Control Mechanism, TMS – Top Management Staffing, KFOA - Key Functional and Operational Areas, SPPP - Support in policy and planning process, TLO – Training and Learning Opportunities; PS – Perceived Satisfaction, PICJVM - Performance of ICJV Management, PrP - Project Performance, ParP – Partner Performance

All critical  $t$ -value are two-tailed at 1.96 (with a significant at  $p < 0.05$ .)

**Table 4.15: Discriminant Validity of Constructs**

Code	Factors	KFOA	PICJVM	ParP	PS	PrP	SPPP	TLO	TMS
KFOA	Key Functional and Operational Areas	<b>0.805</b>							
PICJVM	Performance of ICJV Management	0.405	<b>0.819</b>						
ParP	Partner Performance	0.027	0.521	<b>0.759</b>					
PS	Perceived Satisfaction with the ICJV	0.461	0.570	0.464	<b>1.000</b>				
PrP	Project Performance	0.226	0.622	0.401	0.309	<b>0.791</b>			
SPPP	Support in policy and planning process	0.501	0.312	0.354	0.481	0.494	<b>0.760</b>		
TLO	Training and learning opportunities	0.389	0.280	0.627	0.258	0.054	0.110	<b>0.844</b>	
TMS	Top Management Staffing	0.171	-0.404	0.541	0.369	0.046	0.056	0.360	<b>0.868</b>

Note: the bold diagonal values are the square root of AVE of each construct. Off-diagonal values are the correlation between constructs.



**Table 4.16: Analysis of Cross Loading for Individual Measurement Items (Latent Variables)**

Measurement item	Correlations with respect to the latent variables							
	TMS	KFOA	SPPP	TLO	PrP	ParP	PICJVM	PS
TMS 1	<b>0.946</b>	0.611	0.533	0.392	0.060	0.515	0.397	0.427
TMS 2	<b>0.782</b>	0.468	0.423	0.185	-0.008	0.393	0.288	0.138
KFOA 1	0.442	<b>0.871</b>	0.514	0.374	0.310	0.571	.0573	0.482
KFOA 2	0.424	<b>0.723</b>	0.532	0.303	0.276	0.411	0.546	0.595
SPPP 1	0.175	0.225	<b>0.702</b>	0.356	.447	0.521	0.612	0.221
SPPP 2	0.021	0.032	<b>0.754</b>	0.522	0.462	0.114	0.611	0.554
SPPP 3	0.461	0.401	<b>0.703</b>	0.459	0.472	0.532	0.575	0.361
SPPP 4	0.588	0.561	<b>0.819</b>	0.598	0.499	0.452	0.132	0.518
SPPP 5	0.167	0.175	<b>0.732</b>	0.222	0.212	0.517	0.539	0.088
SPPP 6	0.636	0.607	<b>0.828</b>	0.530	0.270	0.455	0.580	0.392
SPPP 7	0.335	0.592	<b>0.761</b>	0.320	0.481	0.670	0.402	0.284
TLO 1	0.398	0.483	0.543	<b>0.901</b>	0.603	0.487	0.322	0.328
TLO 2	0.176	0.081	0.237	<b>0.783</b>	0.478	0.258	0.251	0.064
PrP 1	0.374	0.548	0.468	0.519	<b>0.707</b>	0.463	0.536	0.379
PrP 2	-0.299	0.049	0.087	0.128	<b>0.702</b>	0.047	0.307	0.175
PrP 3	0.000	0.135	0.367	0.591	<b>0.851</b>	0.315	0.474	0.241
PrP 4	0.115	0.273	0.602	0.564	<b>0.848</b>	0.509	0.559	0.360
PrP 5	-0.126	0.207	0.324	0.488	<b>0.810</b>	0.273	0.365	0.077
ParP 1	0.012	0.533	0.578	0.434	0.660	<b>0.703</b>	0.610	0.469
ParP 2	0.420	0.406	0.552	0.299	0.025	<b>0.833</b>	0.580	0.269
ParP 3	0.409	0.400	0.597	0.667	0.415	<b>0.701</b>	0.552	0.242
ParP 4	0.379	0.406	0.682	0.496	0.202	<b>0.750</b>	0.562	0.370
ParP 5	0.419	0.606	0.334	0.567	0.458	<b>0.820</b>	0.595	0.556
ParP 6	0.545	0.528	0.448	0.336	0.082	<b>0.772</b>	0.607	0.183
ParP 7	0.691	0.449	0.684	0.614	0.318	<b>0.833</b>	0.657	0.341
PICJVM 1	0.347	0.444	0.553	0.543	0.598	0.513	<b>0.871</b>	0.341
PICJVM 2	0.308	0.557	0.452	0.497	0.563	0.514	<b>0.853</b>	0.493
PICJVM 3	0.369	0.482	0.481	0.259	0.308	0.478	<b>0.713</b>	0.441
PS 1	0.213	0.112	0.512	0.446	0.024	0.532	0.299	<b>1.000</b>

Note: KFOA - Key Functional and Operational Areas, SPPP - Support in policy and planning process, TLO – Training and Learning Opportunities, TMS – Top Management Staffing, PS – Perceived Satisfaction, PICJVM - Performance of ICJV Management, PrP - Project Performance, ParP – Partner Performance

Bold values are significant at 0.01 level.

#### 4.5.2 Structural Model Evaluation

From Table 4.17 and Figure 4.1, all the path coefficients were within the standardized range of -1 to +1 (Hair et al. 2014; Dijkstra and Henseler, 2015). Eight (8) of the hypothesized relationship indicated a strong positive correlation with the dependents constructs and two (2) showed a negative relationship to the dependent construct. Further, all the t-values of the latent constructs that showed a positive relationship were above 1.96 (significance level = 0.05), except for those with negative correlations (see Table 4.17). this is an indication that, all the path coefficients were statistically significant in the predicted direction, showing strong overall support for the hypothesized model. In this study,  $R^2$  values of the four dependent constructs, which are, PrP, PS, PJVM, and ParP, which recorded 0.584(58%), 0.565 (57%), 0.784 (78%) and 0.528(53%) respectively, indicated a significant predictive power or accuracy of the model. This indicate that the independent constructs (control mechanisms) greatly influence performance measures.





**Table 4.17: Structural Model Evaluation and Hypothesis Testing**

Code	Paths	Hypothesized sign	Beta	T-value*	Inference
H1	Top Management Staffing of Local Partners >> Performance of ICJV Management (TMS>>PICJVM)	+	0.423	5.231	Supported
H2	Top Management Staffing of Local Partners >> Project Performance (TMS>>PrP)	+	0.529	9.933	Supported
H3	Top Management Staffing of Local Partners > Perceived Satisfaction with the ICJV (TMS>>PS)	+	-0.296	0.538	NS
H4	Local Partners in Key Functional and Operational Areas >> Perceived Satisfaction with the ICJV (KFOA>>PS)	+	0.205	2.149	Supported
H5	Local Partners in Key Functional and Operational Areas >> Project Performance (KFOA>>PrP)	+	0.306	2.487	Supported
H6	Local Partners in Key Functional and Operational Areas >> Partner Performance (KFOA>> ParP)	+	0.727	13.210	Supported
H7	Local Partners Support in Policy and Planning Process >> Performance of ICJV Management (SPPP>> PICJVM)	+	0.948	25.790	Supported
H8	Local Partners Support in Policy and Planning Process >> Perceived Satisfaction with the ICJV (SPPP>>PS)	+	0.330	2.645	Supported
H9	Provision of Training and Learning Opportunities by Local Partners >>Project Performance (TLO>>PrP)	+	0.704	11.131	Supported
H10	Provision of Training and Learning Opportunities by Local Partners >> Perceived Satisfaction with the ICJV (TLO>>PS)	+	-0.246	0.429	NS

Note: NS – Not Supported; bootstrapping setting comprises (1) use of individual sign changes (Henseler et al. 2009) and (2) the number of bootstrap samples (Hair et al. 2011).

\*All critical *t*-value are two-tailed at 1.96 (with a significant at  $p < 0.05$ .)

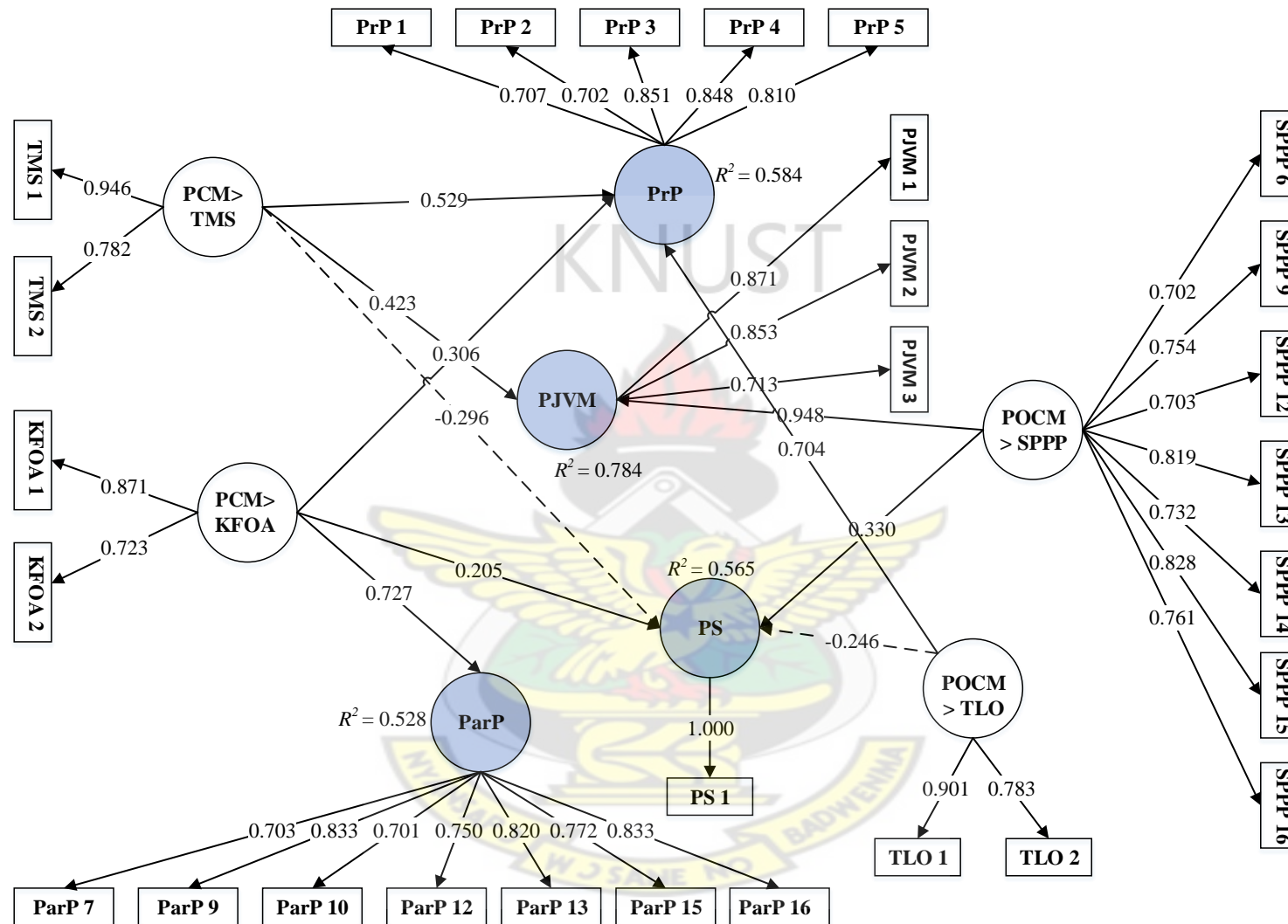


Figure 4.2 Structural equation model with factor loadings and path coefficient

- > Indicates a significant path (hypothesis supported)
- - - - -> Indicates an insignificant path (hypothesis not supported)

## Note

PICJVM - Performance of ICJV Management	TMS 2 - Establishment of senior executive positions with local members (e.g. Project managers, Contractors, etc.)
ParP - Partner Performance	KFOA 1 - Placement of local members in key functional areas (e.g. Engineers, Site supervisors, etc.)
PS - Perceived Satisfaction with the ICJV	KFOA 2 - Deployment of local members in operational areas (e.g. labourers)
PrP - Project Performance	SPPP 6 - Support in making development plan for local communities
PCM>TMS - Personnel Control Mechanisms > Top Management Staffing	SPPP 9 - Identifying H&S risks for employees during planning
PCM>KFOA - Personnel Control Mechanisms > Key Functional and Operational Areas	SPPP 12 - Support in monitoring and reporting project sustainable performance
POCM>SPPP - Policy Control Mechanisms > Support in policy and planning process	SPPP 13 - Reporting on construction progress and schedules
POCM>TLO - Policy Control Mechanisms > Training and learning opportunities	SPPP 14 - Laying down procedures and routines for the ICJV
TMS 1 - Establishment of corporate board members with local officials	SPPP 15 - Support in supervisory role
SPPP 16 - Planning and approval for capital budgeting and resource allocation	TLO 1 - Provision of knowledge of governmental issues to the partner
TLO 2 - Provision of knowledge of the local market to the partner	TLO 3 - Provision of knowledge of the local culture to the partner
PrP 1 - Good time performance of ICJV project (i.e. completing projects within schedule)	ParP 6 - Costs reduction
PrP 2 - Good cost performance of ICJV project (i.e. completing projects within budget)	ParP 7 - Equitably sharing of risks
PrP 3 - Satisfying the client requirement /expectations	ParP 8 - Achieving of technology transfer/learn technical skills from your partner
PrP 4 - Good safety performance	ParP 9 - Learning management skills from your partner
PrP 5 - Achieving required project quality	ParP 10 - Frequency of visiting the foreign partner headquarters
ParP 1 - Creating long-term relationships	ParP 11 - Frequency of being invited to join training activities hosted by partner firm headquarters
ParP 2 - Increasing competitiveness (likelihood of getting the job)	PICJVM 1 - Effectiveness of the organizational control of the ICJV
ParP 3 - Frequency of communication among partnering firms	PICJVM 2 - Effectiveness of the operational (daily activities) control of the ICJV
ParP 4 - Sharing resources (financial, human, equipment etc.)	PICJVM 3 - Effectiveness of the strategic (upper management) control of the ICJV
ParP 5 - Enabling internationalization (entering new markets)	PS 1 - Satisfaction of your firm with the ICJV

### **4.5.3 Discussion of Results**

Using the results from the PLS-SEM analysis, this section presents the discussion of the individual independent constructs and their causal relationship with the dependent constructs.

#### ***Local partners' personnel located in top management positions and performance of ICJV management***

This is specifically related to the use of personnel, located in top management positions and use of local personnel as a means of control, and their impact on performance of ICJV management. Two reflective variables formed this construct, all recorded loadings above 0.70 which were within the acceptable range. This relationship showed a significant positive path coefficient of 0.43, which suggest that local partners placed in top management position greatly influence performance of ICJV management. With local personnel's occupying top management positions allows them to apply their own direction or goals upon the IJV. This leaves the guiding principles up to the local partner to implement its design and ideas according to the wishes and strategic decisions, which eventually determine the positioning of the local company in the local market. It is in this strategic free will that corporate objectives are being realized. This is reflected in the studies of Reuer et al. (2014) that, IJV acquires more gains when it delegates more authority to local management for international collaborations. Thus, the general believes that having top positions filled with local personnel from the initial perspective is not surprising due to the expertise of these leaders. This has been identified in previous studies (Li, 2008; Hwang et al. 2017) therefore should be measured an exceptionally important key to control of an ICJV.

#### ***Local partners' personnel located in top management positions and project performance.***

Theoretically, research has long advocated that collaborative arrangements provide firms with a means to access, learn, and integrate partners' complementary knowledge and capabilities (Das and Teng, 2000). IJVs are often located in unpredictable host markets that are characterized by changes in host government policies and regulations, local supply conditions, client demand, and so forth. These conditions require decisions of the local partner to change policies and redeploy assets, for the timely fashion of such changes. In the case of the construction industry, the unpredictability of the local environment as well as cultural diversification of partners results in management difficulties (Hwang et al. 2017). Thus, relying on foreign management, which without the knowledge and experience of the local partner, stunt the project performance as well as the IJV management. Local partners located at the top management positions in construction decides on strategic or operations-related areas. The strategic-related areas focus on financial performance, business development, budgeting etc. while, operations-related focus on; construction progress, legal contracts and regulatory documents, construction schedules and cost estimates, performance reporting, scheduling and monitoring etc. Furthermore, with respect to an IJV operating in developing countries, it is generally the local partner that helps their IJV succeed by providing market-based resources (MR) resources (country-specific knowledge, contact with regulatory authorities, and more importantly, management of the local workforce) (Inkpen and Beamish, 1997). When top management positions are filled by foreign partners alone, to control and coordinate operations can slow decision making, lead to errors, and be costly (Brouthers, 2002). In the same vein, Reuer et al. (2014) postulated that, with the unpredictability of these changes makes it difficult for foreign partners to control and coordinate the venture since foreign partners occupying top management positions possess imperfect information concerning local conditions and obtaining this information can be costly. These high costs are shaped by the difficulties in ascertaining the organization performance, making performance attributions, and deciding on



appropriate adjustments (e.g., in budgets, operations, personnel, etc.). This is highly reflected in the PLS analysis, of having a positive path coefficient of 0.423.

***Local partners' personnel located in top management positions and perceived satisfaction with the ICJV***

The negative correlation of this factor with perceived satisfaction suggest that, top management position is often directly related to business-centric objectives and success (Liu et al. 2014). The attitudinal base of local partners in ICJV in Ghana perceive satisfaction as actively involved or participate in strategic decision making as a way to meet their higher-order requirements, like for trust, respect, independence, and equality. Therefore, local partners are satisfied with the organization to reciprocate the goodwill and power implied by their decision-making rights, as endorsed by the ICJV and not necessarily filling top management positions, studies by Li (2008) throw more light on it.

***Deployment of local partners in key functional and operational areas and perceived satisfaction with the ICJVs***

This is one key area that does not certainly require or relate to majority ownership within the IJV, however, is based on more specific process area control to be managed and influence by the partners. Local partners with an in-depth knowledge and experience in operational process areas like project supervision (including management of the local workforce as well as the overall project in particular), reporting on construction progress and inspection report, and other related areas (Zhan et al. 2009), allows them to have control of these functions. Regardless of the fact that the partner holding much equity shares within the venture have greater control over the ICJV (i.e. membership right on the ICJV board of directors, to determine key appointments, etc.), the Local Content and Local Participation, Regulation, 2013 L.I 2204, introduced in Ghana ensures that there

is an immediate increase in the share of local employees. Therefore, the policy goes far in imposing a legal requirement on foreign firms in joint participation with local firms to actively recruit the local workforce in such a way as to create jobs or facilitate the transfer of valuable skills and knowledge from foreign labour to the local workforce. This is an indication that, with the provision of market-based resources (management of local workforce, channel members, government agencies) (Kim et al, 2011), local firms ensure greater majority of their members in strategic and operational areas which makes the level of control and influence more predictable. Thus, this create satisfaction for the local partner as the increased in the level of participation sends a signal to local partners about their status as insiders. As demonstrated in the PLS analysis, there exist a strong positive correlation this control mechanism and partner performance.

***Deployment of local partners in key functional and operational areas and project performance.***

As partners feel their presence in any activity in a collaborative relationship, they become more committed which leads to higher project performance (Cullen et al. 1995). Thus, as indicated in the literature review, there exist a positive correlation between staffing local partners in key functional and operational areas and project performance. As demonstrated in the PLS analysis, this mechanism is positively correlated with project performance, this confirms the expectation that an ICJV's performance will be enhanced through increased local staffs in key functional and operational areas because it maintains a knowledge and support source for operations (Li, 2008).

***Deployment of local partners in key functional and operational areas and partner performance.***

To control these functions potentially lend itself towards a belief that the knowledge and expertise held by the local partner will prevent mistakes from occurring thereby streamlining processes in order to enhance the project performance. This provides the local partner to align its objectives and enable transfer of its cultural, policies and practices to its indigenous local firms and thus, create a

positive spillover for the local personnel (Selekler-Gökşen and Uysal-Tezölmez, 2007). Performance increase in the task related is based on the fact that, knowledge base is a significant attribute and the hands-on expertise is readily available, it comes with smoother integration and transfer of knowledge between the firms in the IJV (Lyles and Salk, 1996). Thus, higher levels of involvement of the local partner in the routine or day-to-day operations of the ICJV activities probably accounts for increase in partner performance.

***Local partner support in policy and planning processes and performance of the ICJV management.***

Support control mechanism is also very important when discussing the provision of specific local knowledge and expertise by the local partner. As firms are repositories of knowledge, local knowledge stands out as a major determinant of sustainable competitive advantage (Dimitratos et al. 2010). Thus, strengthening corporate competitiveness which enhance the overall performance of the IJV. For instance, many studies on knowledge transfer have shown strong correlation between the local partner's support in this area with a more potential for host country knowledge (Phan and Peridis, 2000). The local partner by providing support (intangible firm-specific resource, like management know-how) provides a direct link to the IJV to maneuver around pitfalls or implement better, more streamlined processes as well as prevent negative performance impacts. The application of prior knowledge and experience in the support role removes guesswork together with indecision faced the new venture (Ghuari et al. 2013). Further, with prior experience and knowledge in the support role by the local partner, the venture can reduce transaction costs related to the "trial and error" behaviour in managing the ICJV. Therefore, if foreign partners are left to have total exclusive of policy and planning process, without experience and prior local knowledge, they tend to put more effort into monitoring the behaviour of partners to safeguard their interest

(Pangarkar and Klein, 2004). Thus, this leads to an increase in costs of managing IJVs and lower IJV performance (Larimo and Nguyen, 2015). This mechanism obtained a higher positive path coefficient of (0.948) with performance of the ICJV management, as the effectiveness of the local partner controlling the ICJV relies on some key resource contribution that cannot be provided by the other partner. Thus, local partners exercise greater authority over the ICJV, hence they enjoy the privilege of serving as decision makers for a variety of strategic issues (Li, 2008).

***Local partner support in policy and planning processes and perceived satisfaction with the ICJVs.***

Yan and Duan (2003) postulated that involvement in the policy and planning process is a primary control mechanism and becomes extremely relevant in relation to local knowledge and management issues. Local support in policy and planning process exhibits a strong link between the local partner and ICJV. It relies on the direct participation of the local partner in controlling the IJV (Ghuari et al. 2013). When local partners participate more in alliance decision making, they felt they are important contributors to the organization and gain a sense of achievement (Jun et al. 2001). Thus, this increase in support of policy and planning process sends a signal to the local partners about their status as insiders (Li, 2008), which then increases their job satisfaction as well as enhances the smooth operation of the alliance management.

***Provision of training learning opportunities by the local partner and project performance.***

The role of IJVs as an instrument of organizational learning, allows the development of a common understanding between the local partner and the IJV through set measures (Farrell et al. 2011). The resource-based perspective shows that, organizations are motivated to form IJVs for efficient development and deployment of firm resources. The differences in partner skills and knowledge provide the catalyst for learning (Inkpen, 2000). The local partner employs the training and learning

mechanism through the placement of processes and norms as well as the interaction between its employees and the ICJVs. This increases the socialization between the two and enhances the implementation of knowledge and operational experience in the ICJV. Acquiring knowledge and its significance to an organization is considered simultaneously. Through the learning mechanism provided by the local partner, the foreign partner is able to achieve its learning goals. These include: 1) knowledge of governmental issues; 2) knowledge of the market, and 3) knowledge of culture. This in a way foster cooperation for the smooth IJV management, which in turn improves project performance. Lack of the provision of these learning opportunities would equally propose that the ICJV would be left to the creation of its own norms and processes thus lessening its overall value and potentially creating gaps and flaws in the ICJV operations. Thus, providing policy-based learning opportunity programs will supply information to the employees of the ICJV enhancing the knowledge base and speeding the education. Thus, training allows for demonstration and active participation in processes and operations, therefore removing any time-wasting misunderstandings and allowing for an acceleration of project performance (Ghuari et al. 2013).

***Provision of training and learning opportunities by the local partner and perceived satisfaction with the ICJVs.***

Perceived satisfaction displayed a negative relationship with training and learning opportunities, as the more time invested in day-to-day knowledge provision or training by the local partner the lower the level of satisfaction. This finding is consistent with the results of the study by Ghuari et al. (2013), indicating that over-training, or time spent on more and more training programs, will in turn create a lower level of satisfaction.

Generally, both personnel and policy control mechanisms exhibited diverse relationships with the four performance criteria within this study. It is unsurprisingly that both mechanisms of control



displayed significance in relation to both subjective and objective measures of performance. However, relating to perceived satisfaction with the ICJV management as performance indicator, which is a subjective measure, the control mechanisms of personnel display highly diminished impact. This may be due to the inherent belief in the process itself as directed by many studies that, top management position is often directly related to business-centric objectives and success. Further, local partners occupying top management position always have a negative feeling of visiting construction site daily to oversee daily operations. Nonetheless, policy control mechanisms also show significant relationship to performance measure of project performance and performance of the ICJV management, but much less support in relation to perceived satisfaction. In contrast, policy control mechanism tends to be a lot more focused and specific in certain areas of the ICJV, reliant on the knowledge base of the host partner and contributing more to project performance and management of the ICJV. In conclusion, the training and learning opportunities provided by the local partner greatly gives the local partner the opportunity to control the method by which the ICJV operates. More importantly, employing specific personnel to control the operations of the corporation or other areas of involvement create satisfaction for the local partner as the increased in the level of participation sends a signal to local partners about their status as insiders.

## **CHAPTER FIVE**

### **SUMMARY OF RESEARCH FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 INTRODUCTION**

The summary of the key research findings tailored to the proposed research aim and objectives are presented in this chapter. The conclusion, relevance and contributions of the study are also laid out in this chapter. Moreover, limitations of the research and suggestions for future research directions are provided as well.

#### **5.2 SUMMARY OF RESEARCH FINDINGS**

The study aims to investigate the impact of local partner control mechanisms on performance measures in International Construction Joint Ventures (ICJVs) in Ghana. The specific objectives of the research are: to identify the mechanisms used to control the activities of International Construction Joint Ventures (ICJVs) by local partnering firms; to identify the criteria used by local partnering firms in assessing the performance of International Construction Joint Ventures (ICJVs); and to assess the impact of the control mechanisms used by local partnering firms on performance measures in International Construction Joint Ventures (ICJVs).

##### **5.2.1 Identification of the mechanisms used to control the activities of International Construction Joint Ventures (ICJVs) by local partnering firms in Ghana**

A systematic desktop literature review and a pilot survey yielded 19 observed indicators (variables) as control mechanisms grouped under two major heading (personnel and policy control mechanisms). However, these were subdivided into four dimensions. Under personnel control mechanisms we have top management staffing, and key functional and operational area. Support in policy and planning process, as well as training and learning opportunities formed the policy

control mechanisms. Personnel control mechanisms is the most significant control mechanisms employed by local firms since, the Local Participation, Regulation, 2013 L.I 2204, introduced in Ghana ensures that there is an immediate increase in the share of local employees whenever there is a joint participation of local and foreign firms. Also, local partners reported that policy control mechanisms are key areas that do not certainly require or relate to majority ownership within the ICJV. However, is based on more specific process area control to be managed and influence by the partners. Local partners with an in-depth knowledge and experience in operational process areas like project supervision and other related areas allows them to have control of these functions.

### **5.2.2 Identification of the criteria used by local partnering firms in assessing the performance of International Construction Joint Ventures (ICJVs)**

The outcome of the results indicates that, project performance measures are key and integral for all types of construction projects from the perspective of construction firms. Therefore, local partners in ICJVs should incorporate this general measure of performance as the benchmark of success in any partnership they venture into or in respect of projects they undertake. This was followed by perceived satisfaction with the ICJV. The local partner is more concerned with the level of involvement in the routine or day-to-day operations of the ICJV activities and this probably accounts for his satisfaction with the ICJV. Performance of the ICJV management was rated third because, from the strategic perspective view, local firms perceive this measure as integral to the process of IJV formation, operation as well as future collaboration. The issue of control (management) in construction is a broad spectrum of diverse activities, which requires functional or well-designed structures which performance can be decided on. With this performance measure viewed as a subjective indicator, local partners become more satisfied when they are granted greater authority in decision-making responsibilities with respect to the ICJV operations. Partner

performance was rated low as compared to the three performance measures. the observation implies that local partners involved in ICJV projects places much concern about the long-term strategic benefit reaped through the ICJV practices since the advancement in the JV management skills as well as improvement technology through the collaboration, provides a firm ground for the success of future ICJV projects and increase in competition respectively. Often times, government policy encourages IJVs to enable local partners tap into the knowledge and technology of foreign partners

### **5.2.3 Impact of the control mechanisms used by local partnering firms on performance measures in International Construction Joint Ventures (ICJVs)**

Based on the developed structural equation model, the relationships between the four control mechanisms employed by local firms and four distinct performance measures were tested and validated. Of the ten (10) hypotheses proposed, eight (8) were supported. Generally, both personnel and policy control mechanisms exhibited different relationships with the four performance criteria. It is unsurprising that both mechanisms of control displayed significant positive relations to both subjective and objective measures of performance. However, relating to perceived satisfaction and performance of the ICJV management, personnel control mechanism displayed a highly diminished effect.

Nonetheless, policy control mechanisms also showed a significant impact on project performance and performance of the ICJV management, but much less support in relation to perceived satisfaction. In contrast, policy control mechanism tends to be a lot more focused and specific in certain areas of the ICJV, reliant on the knowledge base of the host (local) partner and contributing more to project performance and management of the ICJV.

## **5.3 SIGNIFICANCE AND CONTRIBUTIONS OF RESEARCH**

### ***5.3.1 Contribution to Current Knowledge***

The study has contributed precisely to ICJVs literature through a thorough elucidation of the mechanisms used to control the activities of ICJVs; criteria adopted by local partnering firms to assess the performance of ICJVs in the Ghanaian context; and the impact of the control mechanisms used by the local partnering firms on performance measures in ICJVs. The preceding findings alongside findings from previous studies constitute valuable references to explore similar subjects of ICJV applications.

Again, literature on IJVs have been more biased to studies on foreign partner control mechanisms as compared to that of the local partner. Thus, the influence of the local partner control mechanisms on the overall performance of IJVs have not been given that much attention. The study conceptualized the mechanisms for controlling ICJVs activities in the Ghanaian context and systematically explored the impact of the mechanisms on performance measures in ICJVs from the local partner perspective. With the development of the subsequent abridged knowledge gap, the study has increased the current knowledge base of the local partner mechanisms used to control ICJVs activities, and its impact on performance measures in Ghana. This could provide to local partnering firms with constructive insights into effective management of ICJV's activities in Ghana.

A profound list of mechanisms used to control ICJVs activities including criteria for assessing the performance of ICJVs have been hypothesized in the study. The study has contributed to literature by providing a base to reference for akin future research.



Findings from the study has reinforced that local partners placed in top management and key functional position as well as providing support and training opportunities are significant determinant factor for performance in ICJV activities. Impact of the various control mechanisms on performance measures were explored by using PLS analysis. The identified effects could enhance the understanding about the contribution of specific mechanism to improve performance by the local partner. Further, the subsequent findings could also provide valuable insights for ICJV project managers especially the local partners to enhance a specific performance measure to improve the overall project.

### **5.3.2 Contribution to Practical Values**

Practically, managers can employ the results as a direction for making decisions related to effective way of exercising control for the benefit of project as well as the ICJV itself. Consequently, this study will give support to the understanding that, employing control mechanisms that improves the performance goal of partner firm can provide support during the creation and negotiation process in ICJVs. Further, the model can also serve as a benchmarking tool for both the foreign and local practitioners for measuring the level of performance based on the level of participation in ICJV activities.

## **5.4 CONCLUSION**

The study investigates into the impact of local partner control mechanisms on performance measures in ICJVs using four distinct performance criteria. With the mechanisms of control, key mechanisms of control mostly reliant on the personnel involved and the policies put in place were identified. These control mechanisms are; top management staffing, key functional and operational areas, support in policy and planning process, and training and learning opportunities. Because performance assessment is a multivariate construct and cannot be evaluated by using a single

indicator, four dimensions of overall performance which adequately allows assessing the multidimensionality of performance as proposed by Ozorhon et al. (2011) was adopted. These are; project performance, partner performance, performance of the ICJV management, and perceived satisfaction with the ICJV. The combination of both objective and subjective measurement allows for greater understanding of the impact of certain controls mechanisms. From the study, control mechanisms employed by the local partner shows different impact on the performance measures. The findings review that, personnel control represents a vehicle to influence performance at the project level, company level and at the centralized level. However, with a strong correlation to partner performance (company level) through the deployment of local partners in key functional and operational areas. Having local partners occupy top management positions did not yield support for perceived satisfaction with the ICJV management. Policy control mechanisms highly correlate with performance at the project level and centralized level, in that using knowledgeable and expert local partners who have knowledge in the cultural, political, and economic situations of the market could lead to a strong ICJV performance. Further, providing support in policy and planning processes also leads to high performance in terms of the ICJV management. This in effect creates satisfaction for the local partner as the increased in the level of participation sends a signal to local partners about their status as insiders. Thus, there is a ripple effect on the overall performance of the ICJV, by practically combining these factors.

The methodology employed in obtaining high performance levels in all stages and forms of business, remains a critical piece of knowledge that is looked-for. The study advocates that, the methods used by local partners to control and coordinate the activities of ICJVs and their impact upon performance measures are important to understand in different contexts, situations and intentions. This information is imperative for both managers and practitioners in the field of international joint venture management in numerous ways. Practically, managers can employ this

study as a direction for making decisions related to the effective way of exercising control for the benefit of project as well as the ICJV itself. Consequently, the study gives support to the understanding that, employing control mechanisms that improve the performance goal of a partner can provide support during the creation and negotiation process in ICJVs.

## **5.5 RECOMMENDATIONS**

- Drawing on the research findings of the study, local partners have a greater motivation to exercise much control in any collaborative relationship they venture into given their limited local demands. Therefore, it is recommended that, higher management and decision-making authority should be given to the local partners as greater degree of participation by the local partner will enhance their feelings of trust, respect, status as insiders, and satisfaction, which in turn will result in higher performance both at the project, company and at the centralized level.
- Also, from the perspective of social exchange theory, individuals' decision to remain in or terminate relationships is more contingent on their evaluations of the relationship's costs and benefits. As a result of organizational and cultural differences, local partners may feel like less than integral parts of a corporation, so greater social integration will provide a sense of inclusion which enhance performance in the long run.

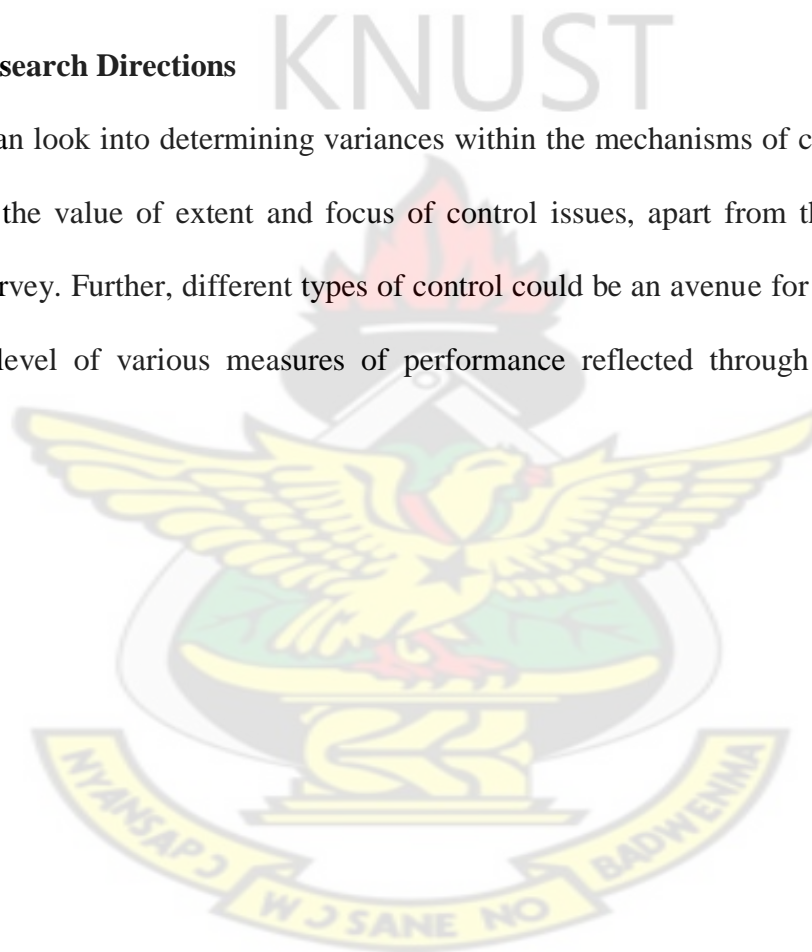
### **5.5.1 Limitations of the Study**

Apart from the perceived theoretical and practical values of the study, it is clearly noted that the research findings are subject to several potential limitations. First and foremost, the study was limited in scope to one country, Ghana, and its measurements were based on viewpoints which can be misleading in another country depending on the viewpoint of the respondent. Though it may be agreed that ICJVs are underpinned by common essential elements irrespective of the locations where the contracting relationship was established and executed. Thus, it is recommended that

similar studies be conducted in other developing countries for cross-comparisons and generalization of common research findings for practical implementation. Also, as globalization continues at a rapid pace, coupled with different set of goals by partners in a collaborative relationships multiple performance measures will be necessary to reflect the different controls as more important than others.

### **5.5.2 Future Research Directions**

Future studies can look into determining variances within the mechanisms of control themselves and to enhance the value of extent and focus of control issues, apart from the cross-sectional questionnaire survey. Further, different types of control could be an avenue for future research in looking at the level of various measures of performance reflected through different control mechanisms.



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